USER'S MANUAL

White

ROTARY ELECTRIC SEWING MACHINES

SERIES 77

TO THE OWNER

When you invested in this White Rotary Electric you placed at your disposal the finest machine obtainable for home sewing. It was precision built for a lifetime of service and if reasonably cared for will deliver the maximum in satisfaction at a minimum of expense.

This manual provides all the information needed to properly care for and operate this White Rotary Electric Sewing Machine. Therefore you are urged to refer to it often, read the simple directions thoroughly and follow them closely, in order to familiarize yourself with the machine and obtain best results through its use.

You will find an alphabetical index to this manual on Pages 53 and 54.

White Sewing Machine Company
1231 Main Avenue,
Cleveland 1, Ohio

White Sewing Machine Products Limited
Toronto 2B, Ontario, Canada

White

KNOW YOUR SEWING MACHINE

See Fig. 1. In the accompanying illustration (Fig. 1) the principal parts of this White Rotary Electric are designated by their names. Study this picture carefully to familiarize yourself with the names and locations of these functional parts which will be referred to throughout this manual.

These operations are all performed while seated at the machine in sewing position.

MOTOR INFORMATION

LUBRICATION: Two grease cups, one at each end of the motor shaft (Fig. 2), provide for motor lubrication. Unscrew the grease cups and fill with special motor lubricant or vaseline occasionally, depending upon use of the machine, or approximately every six months.

CONTROL: The desired speed is obtained by the amount of pressure on the knee lever. Increased pressure increases the speed of the machine.

PULLEY: Be sure the motor pulley (Fig. 2) is adjusted so it centers on the disc wheel of machine.

CONNECTIONS: The insulating bushing on cord leading from rheostat inside cabinet must be snapped into the hole in the bed of machine (Fig. 2). **Next,** connect the three contact connector plug to motor terminal block, as shown in Fig. 2. Then connect the long wall plug cord to any 110 volt (A-C or D-C current) electrical outlet, and machine is ready for operation.

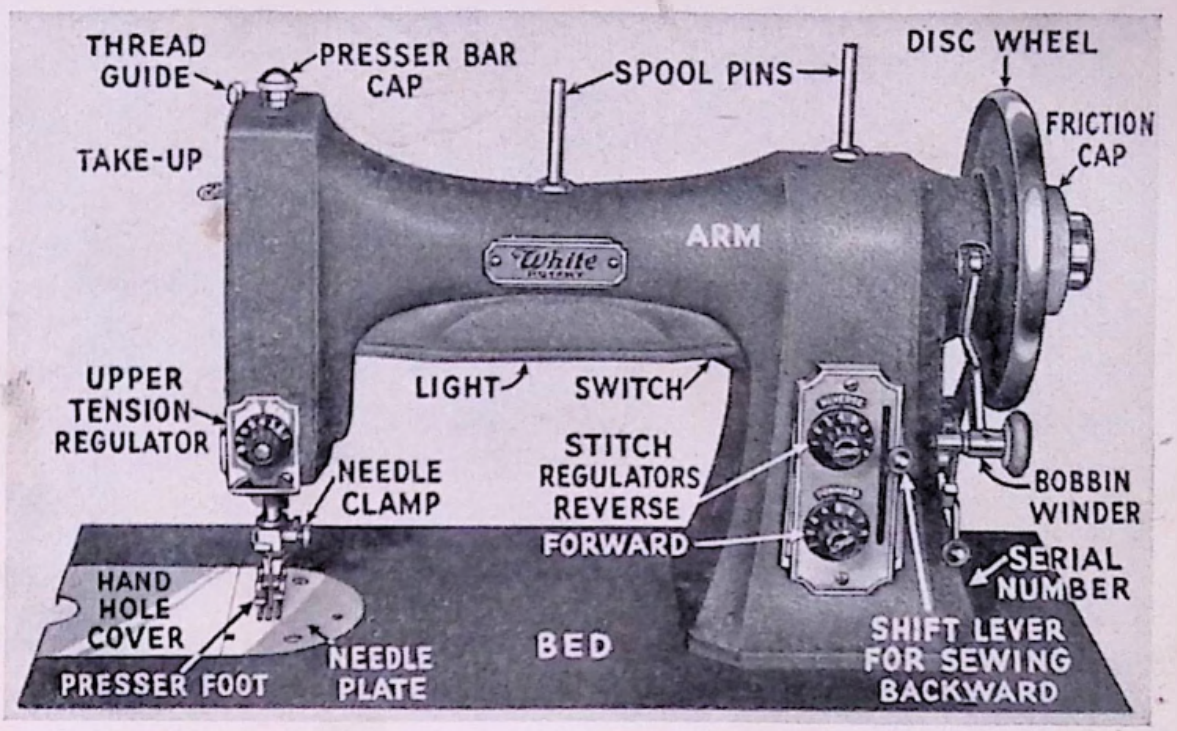


FIGURE 1

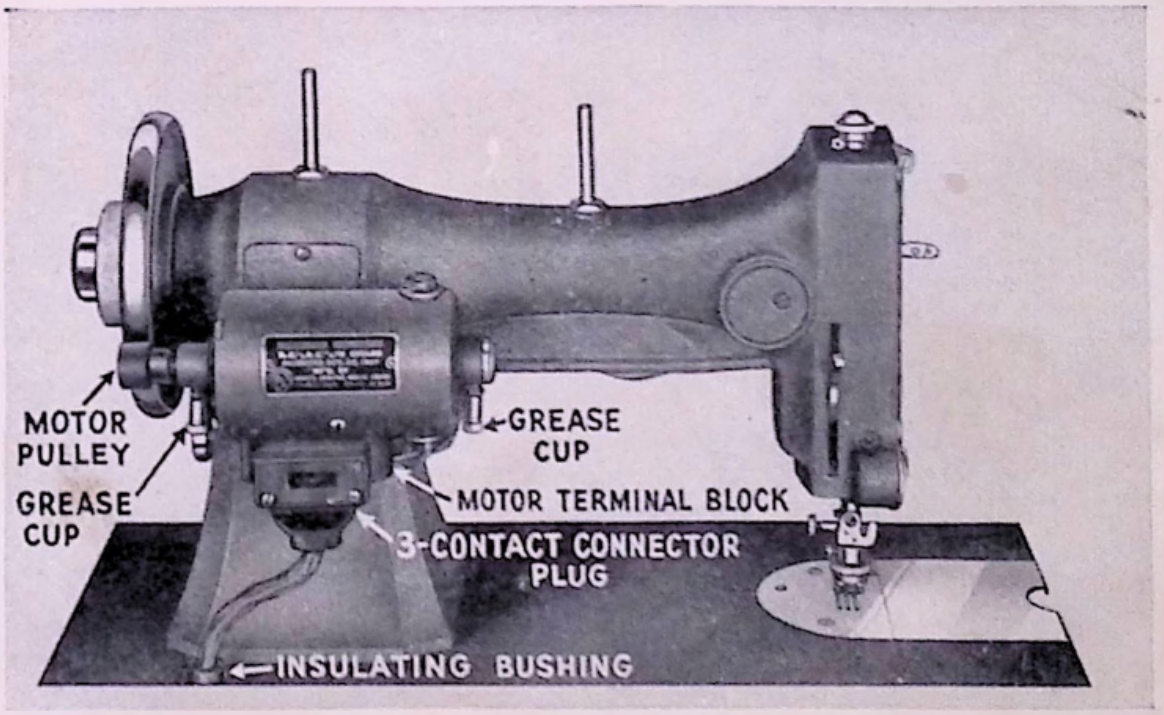


FIGURE 2

OILING MACHINE

Keep the machine well oiled, applying a drop of oil at points shown by arrows in Figs. 3 and 4. Before starting to oil the machine it is very important that the disc wheel be turned by hand until the take-up (Fig. 1) is at **its lowest point.** To reach points indicated in Fig. 4, tip the sewing head back on its hinges.

If used infrequently, oil the machine each time before operating. When in fairly constant use, oil once each day.

For smooth operation and best results it is necessary to use high grade oil. White Sewing Machine Oil, obtainable from any authorized distributor, is especially prepared and recommended.

CLEANING MACHINE

If machine gets dirty or sticky as a result of using poor oil, or from long idleness, oil thoroughly with Kerosene (coal oil) at all points indicated. Then run machine for a short time, wipe dry and oil carefully with White Sewing Machine Oil.

THE DISC WHEEL

Whenever the disc wheel is turned by hand it should always be revolved in the same direction **(clockwise)** as the motor turns it.

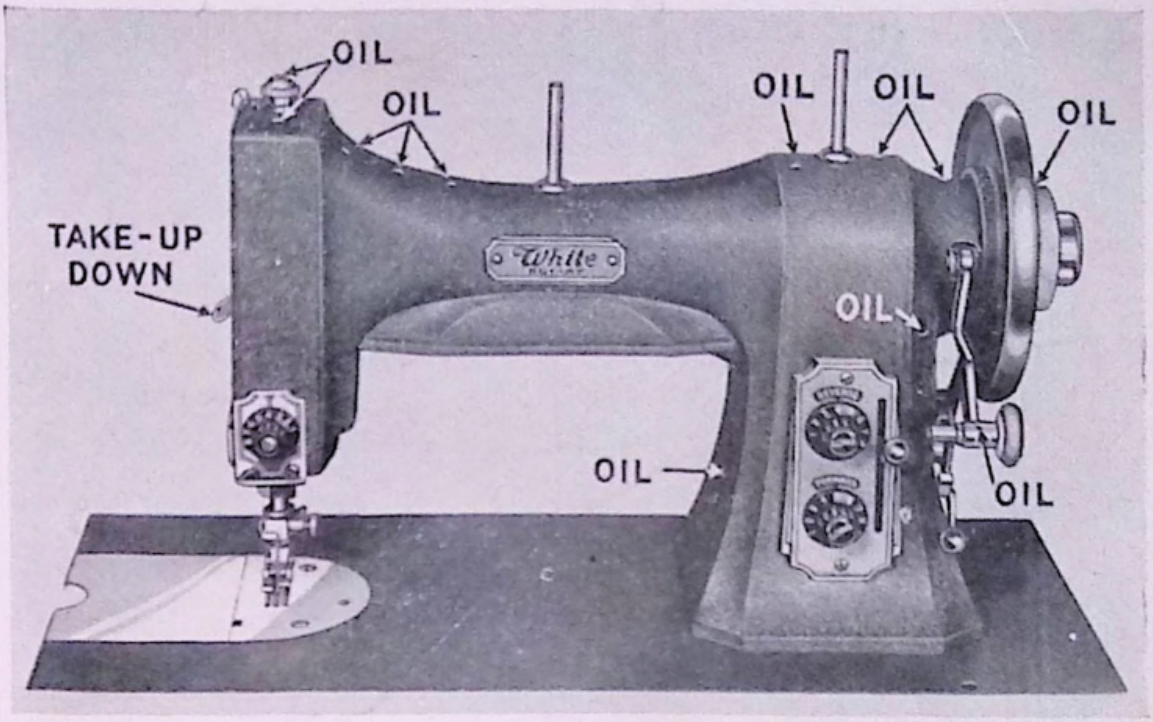


FIGURE 3

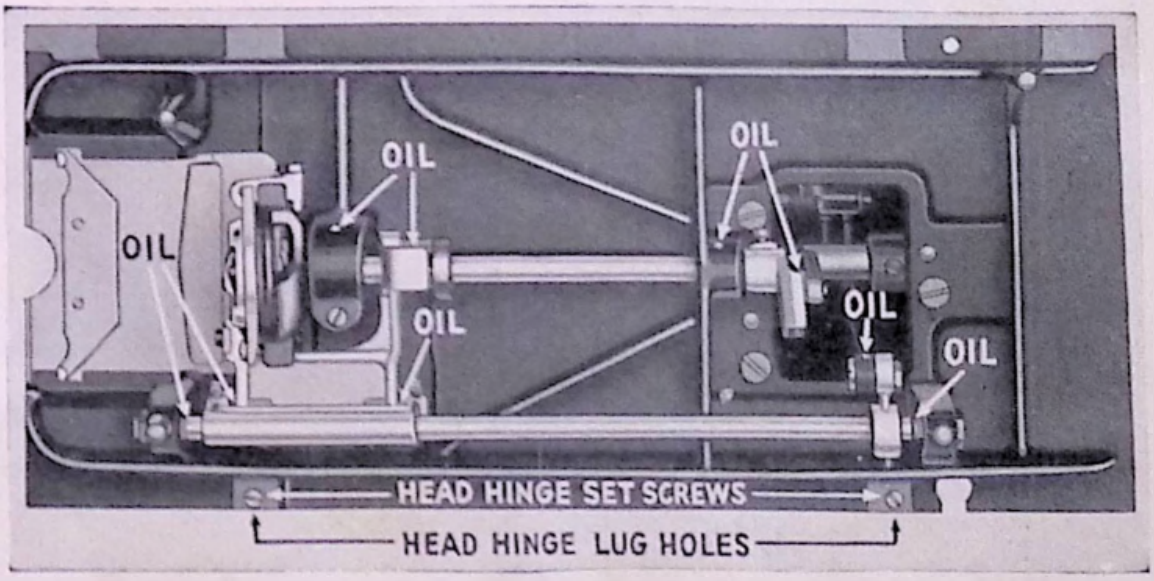


FIGURE 4

SETTING NEEDLE

See Fig. 5. Raise the needle bar to its highest point turning disc wheel by hand. Then loosen the needle clamp screw and the needle clamp will open itself. Place needle (flat side to the right) in the needle clamp slot and push it back or from you as far as it will go, then upward as far as it will go into the needle clamp hole, fastening the needle clamp securely with a screw driver. The needle should operate in the center of needle plate hole from front to back, but close to the right edge.

NEEDLES AND THREAD

When buying needles for this machine, be sure to ask for the genuine White Rotary needles. Imitation or "just as good" needles will cause trouble. Get the genuine "White", see Fig. 6 for exact length.

Never attempt to use a bent needle, nor one with a blunt point.

The size of the needle should conform to the size of the thread and both be suitable to the material. Use a needle sufficiently large to permit the thread to pass freely through the eye. In general sewing use the same thread in the bobbin as used on top.

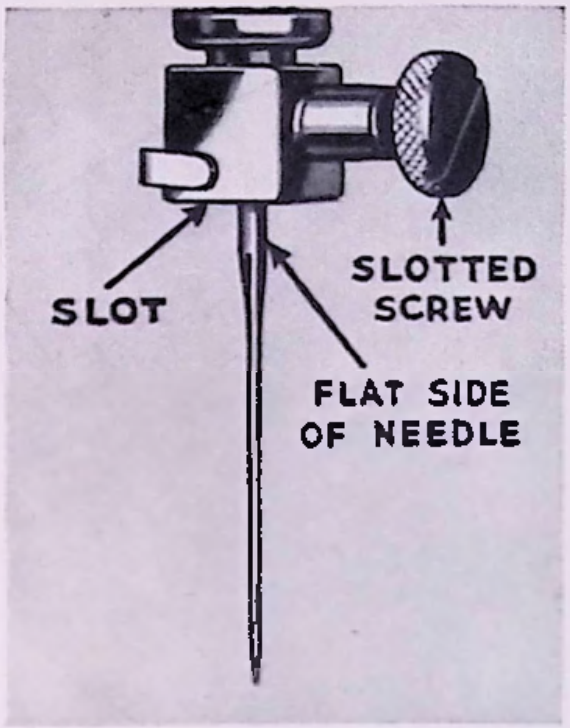


FIGURE 5

TABLE OF NEEDLE SIZES

The following table will show the size of needles generally used with various sizes of thread.

Cotton Thread	Silk Thread	No. of Needle
150 to 300	000	00
90 to 150	00	0
60 to 90	0 & A	1
40 to 60	B	2
30 to 40	C	3
20 to 30	D	4

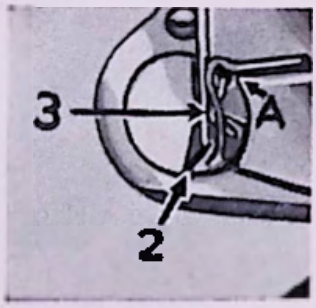
For number 50 mercerized thread, use number 1 needle.

FIGURE 6

THREADING MACHINE

See Fig. 7. Raise the presser foot by raising the presser foot lifter. Then turn disc wheel by hand until the takeup (4) is at **its highest point.** Place spool of thread on the spool pin located in the center of machine arm, and throughout entire threading operation maintain a slight tension on the thread with the fingers of the right hand close to the spool.

With the presser foot raised take end of thread in left hand, holding it with the thumb and first finger, and hook under thread guide (1) **from front to back. Next,** lead thread downward and hook under tension plate hook (2) **from back to front. Next,** pull thread upward and away from you until it hooks into auxiliary spring (3) and falls into notch "A" (small illustration). **Next,** continue upward and hook thread under guard and into take-up slot (4) **from back to front. Next,** pull thread downward and hook into needle clamp thread guide (5) **from right to left. Next,** through eye of needle **from left to right,** allowing about three inches of thread to project beyond eye of needle.



THE TENSION RELEASER

This is operated automatically by the presser bar lifter. When it is raised all tension is removed from the upper thread, and the sewing may be removed without tugging the thread.

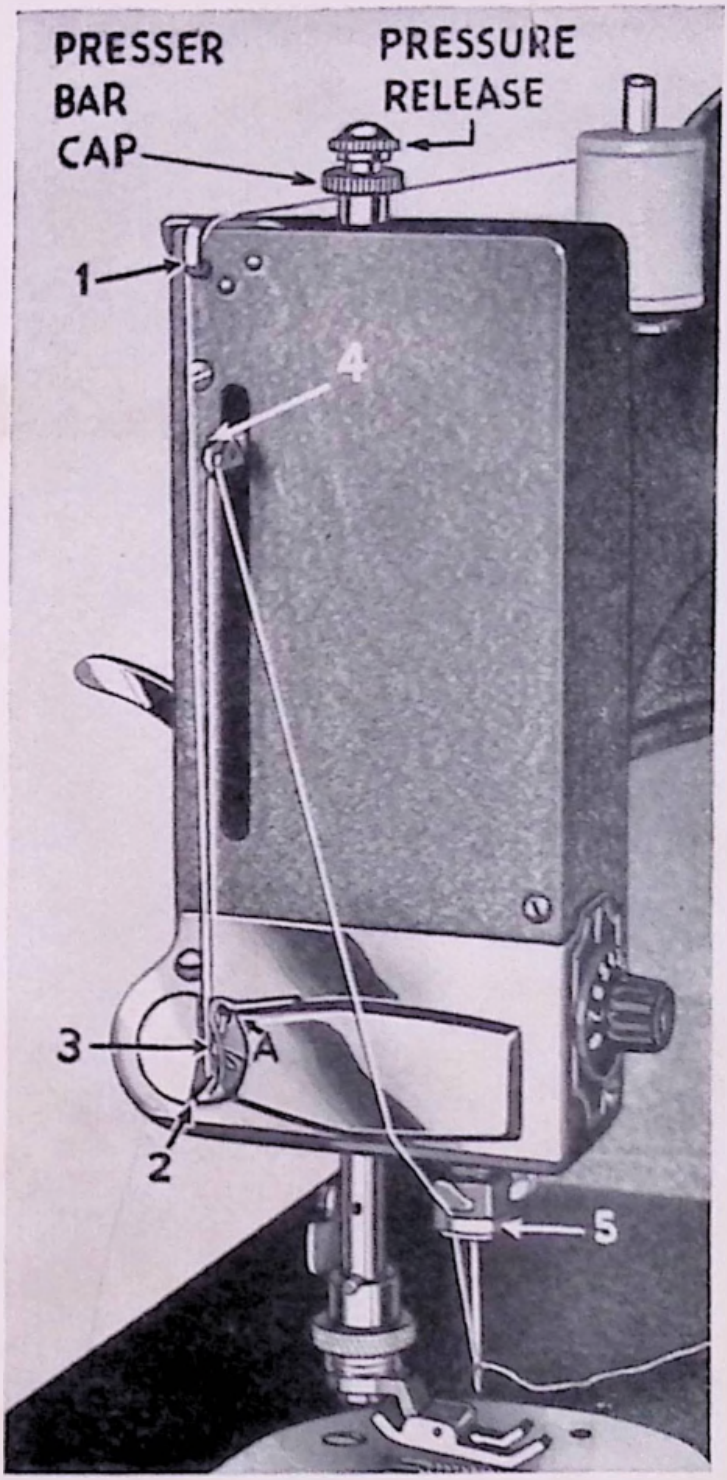


FIGURE 7

NOTE:

See "Darning", Pg. 49 for instructions on the use of the presser bar cap with pressure release shown in Fig. 7.

WINDING BOBBIN

See Fig. 8. Hold the disc wheel with the left hand and turn the friction cap counter-clockwise, loosening it so the wheel will run free without operating sewing mechanism.

Slip the bobbin onto bobbin winder spindle and push to the right as far as it will go.

Place spool of thread on right end spool pin. Take end of thread in fingers of right hand and hook it under guide (A) from left to right. **Next,** lead thread downward between tension discs (B), and put end of thread through hole in bobbin (C), letting about two inches of thread project through hole.

Next, pull lever (D) upward, engaging the bobbin winder pulley with disc wheel. **Next,** hold the end of thread extending through hole (C) with the left hand, run machine and complete the winding of bobbin. When bobbin is full the winder will disengage automatically.

Remove the bobbin from spindle, and clip off the end of thread projecting from hole (C). Hold disc wheel while tightening friction cap and machine is again ready for sewing.

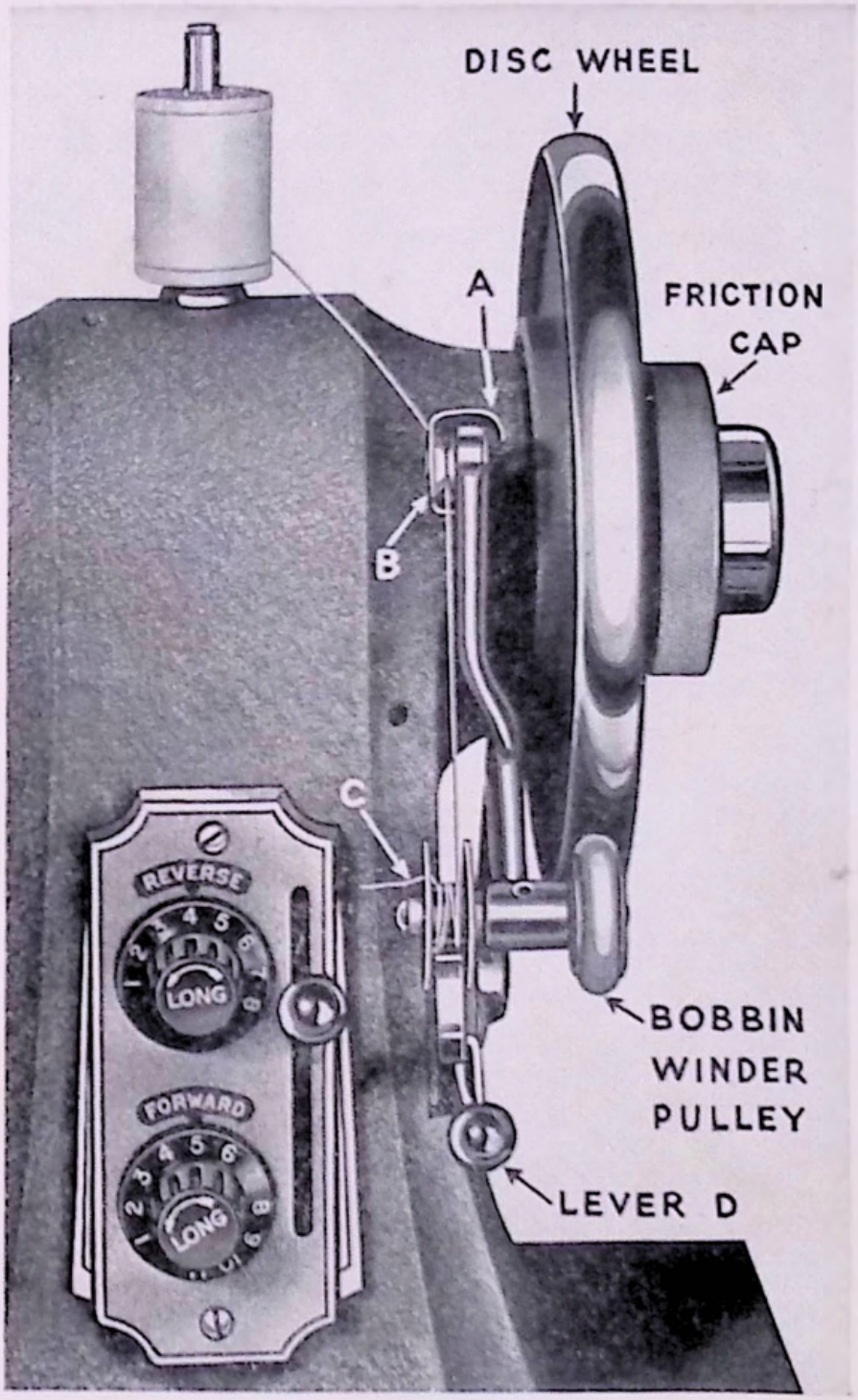

DISC WHEEL
A
FRICTION
CAP
B
C
REVERSE
LONG
FORWARD
LONG
BOBBIN
WINDER
PULLEY
LEVER D

FIGURE 8

THREADING BOBBIN CASE

See Fig. 9. Holding the bobbin case in the left hand, with projecting tongue upward, place the bobbin over center spindle in the case, starting the thread into slot (A) as shown. Then after bobbin is all the way into case, pull end of thread along in slot toward projecting tongue until it emerges at point (B).

PLACING BOBBIN CASE

See Fig. 10. Remove hand hole cover (Fig. 1) by lifting it up at finger hole, permitting you to reach down through hole to shuttle. Hold bobbin case by lips C and D (Fig. 13) with first finger and thumb of left hand, at the same time depressing lip D with thumb. Reach down through hole and slip bobbin case into place over center pin of shuttle, with projecting tongue upright. Push in as far as case will go and release thumb pressure on lip (D), allowing it to snap upward into place, holding the bobbin case in position.

REMOVING BOBBIN CASE

See Fig. 10. After removing hand hole cover, reach down with left hand and take hold of bobbin case by lips C and D (Fig. 13) with first finger and thumb. A slight pressure with the thumb will depress lip D and the case may be readily removed.

Fig. 9

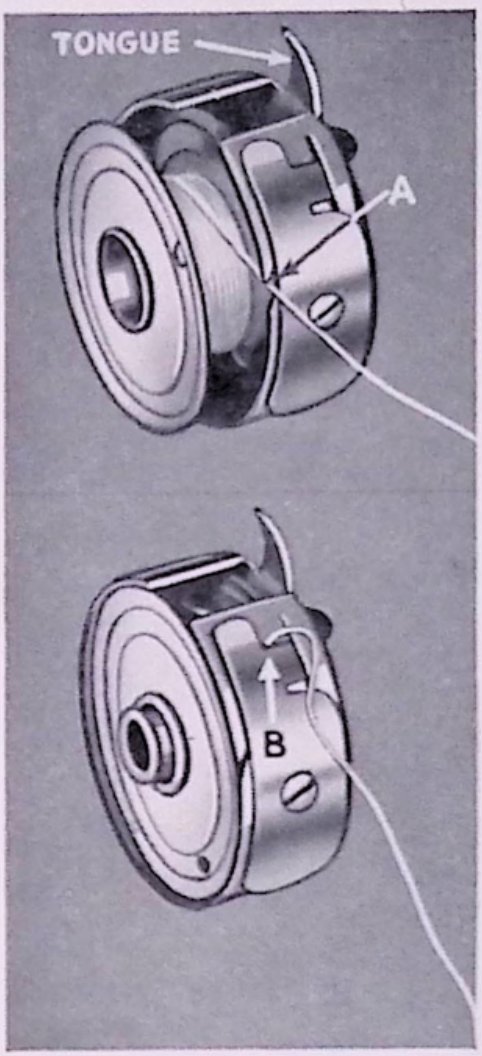
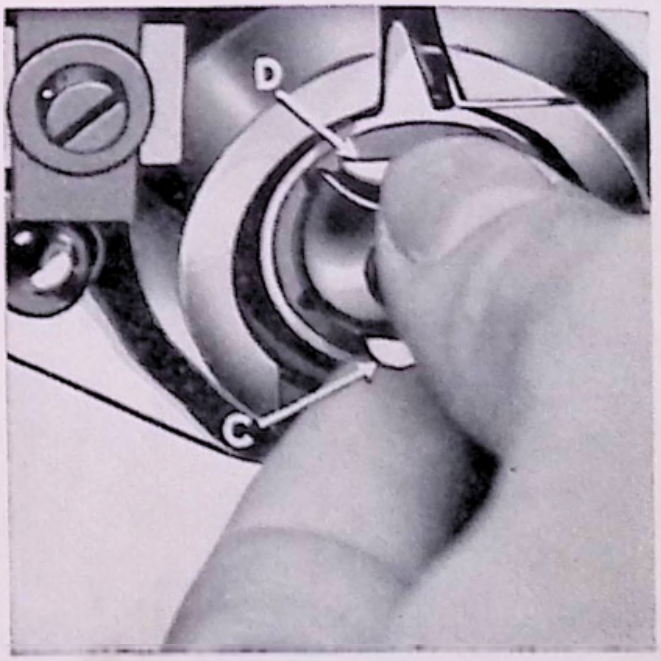


Fig. 10



PREPARING TO SEW

See Fig. 11. Hold the end of the upper thread loosely in the left hand, and with the right hand revolve the disc wheel until the needle goes all the way down and comes back up. A loop will form over the upper thread and be drawn up through the needle hole. Pull the thread forming the loop out straight. Then take the end of this thread together with the end of the upper thread and guide them underneath the presser foot (upper thread in presser foot slot), leading the ends away from you toward the back of the machine.

REMOVING THE WORK

Always stop the machine with take-up (Fig. 1) at **its highest point.** Raise the presser foot with the lifter. Holding the sewing with the left hand pull it directly toward the back of machine, keeping the top thread in the presser foot slot, to avoid bending the needle. Then lift the sewing and draw the threads, together, over the thread cutter (Fig. 1) pulling downward. Both threads will be cut the proper length to again commence sewing.

IMPORTANT WARNING

Never operate this machine when it is threaded without having material (fabric) under the presser foot.

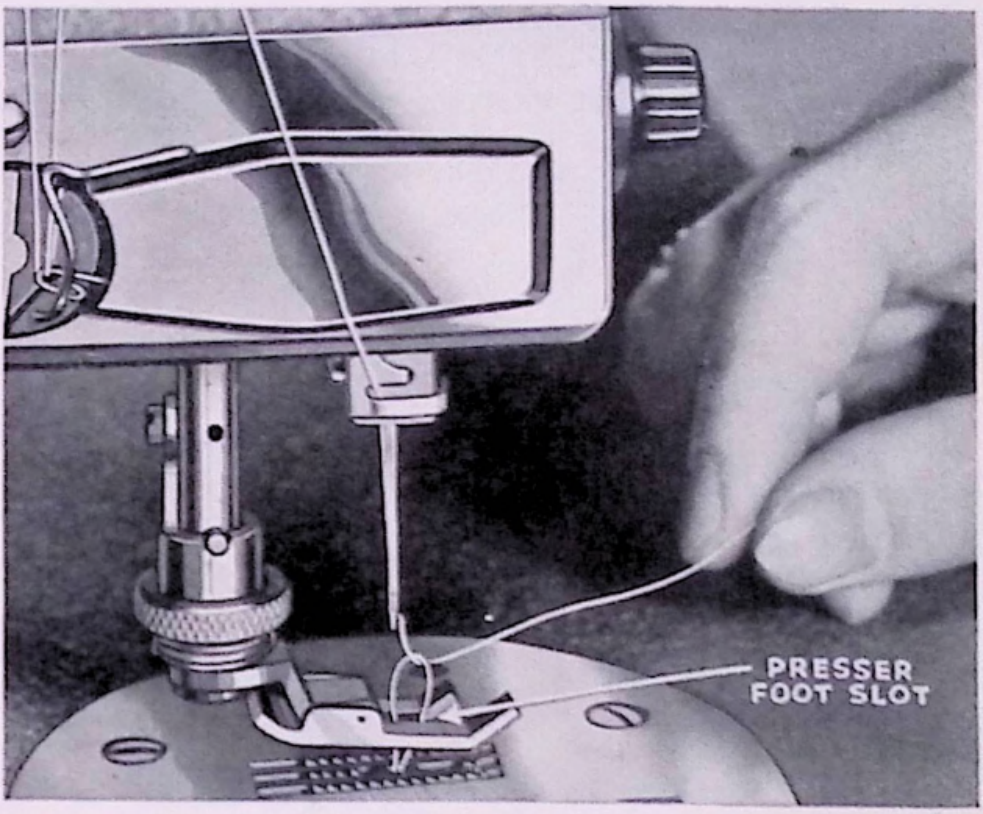
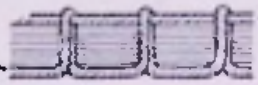


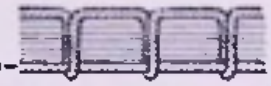
FIGURE 11

PROPER ADJUSTMENT OF TENSIONS

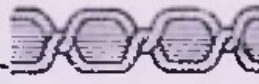
If the upper tension on thread is tight and the lower tension loose, the upper thread will be drawn to the top thus:



If the lower tension is tight and the upper tension loose, the lower thread will be drawn to the bottom thus:



When tensions (both upper and lower) are properly adjusted the stitches in material will look alike on both sides thus:



ADJUSTING UPPER TENSION

See Fig. 12. Be sure the presser foot is down whenever adjusting the upper tension, as the tension is automatically released when the presser foot is raised.

To **increase** the tension on the upper thread turn the dial clockwise (toward No. 8 under pointer etched in plate). To **decrease** the tension, turn dial counter-clockwise (toward No. 1 under pointer).

With this foolproof regulator you may duplicate any particular tension you choose at any time without guesswork or time-wasting experiments. Just turn the dial until the number you desire appears at the top directly underneath the pointer.

ADJUSTING LOWER TENSION

Before adjusting tension be sure that the machine is threaded properly with the thread in notch "A" as shown on page 8.

Incorrect threading will also cause imperfect stitching.

See Fig. 13. Tension on the lower thread is regulated by adjusting screw (T) in bobbin case. To **increase** the tension **tighten** the screw; to **decrease** tension **loosen** the screw.

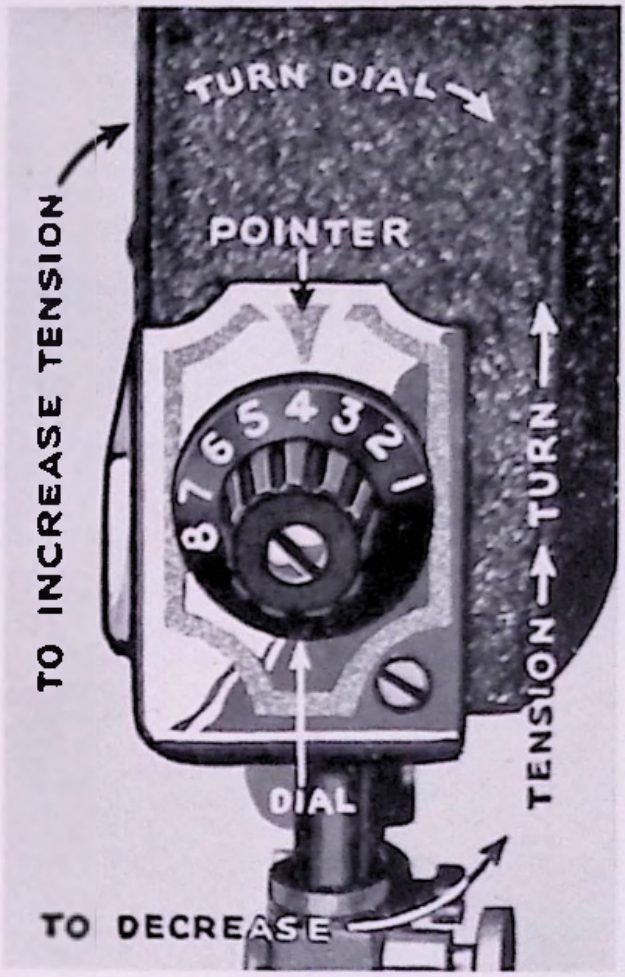


FIGURE 12

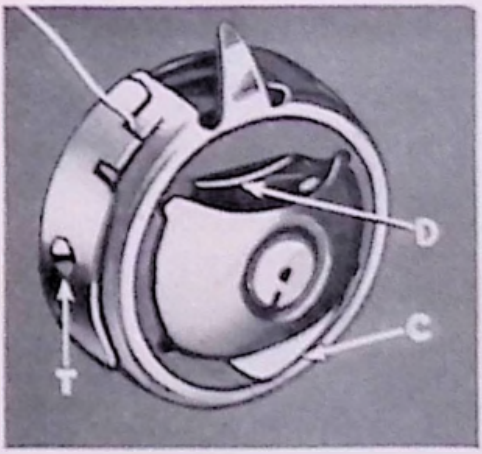


FIGURE 13

SEWING BACKWARD

See Fig. 14. To reverse the feed and sew backward at any time, without stopping the machine, merely press shift lever (A) down in slot. The pressure of one finger is sufficient, and while lever is being held down the sewing will feed backward. When lever is released it returns automatically to its top position in the slot and the machine sews forward again in the regular way. The lever may be moved up and down at will, regardless of the speed at which machine is running. This is a fool-proof device as it is impossible for the operator to leave the machine set for reverse stitching.

ADJUSTING STITCH LENGTHS

See Fig. 14. The length of the stitch for normal sewing (forward) is regulated by the lower dial (B) and pointer. No. 1 on the dial indicates the shortest stitch and No. 12 the longest for regular sewing.

The length of the reverse stitch (sewing backward) is regulated by the upper dial (C) and pointer. No. 1 on the dial indicates the shortest stitch and No. 8 the longest for sewing backward.

These two regulators, operating independently of each other, make it possible to sew approximately the same length of stitch backward as forward, or a longer stitch for the regular sewing than is used for sewing backward, or vice versa, depending entirely upon how both dials are set.

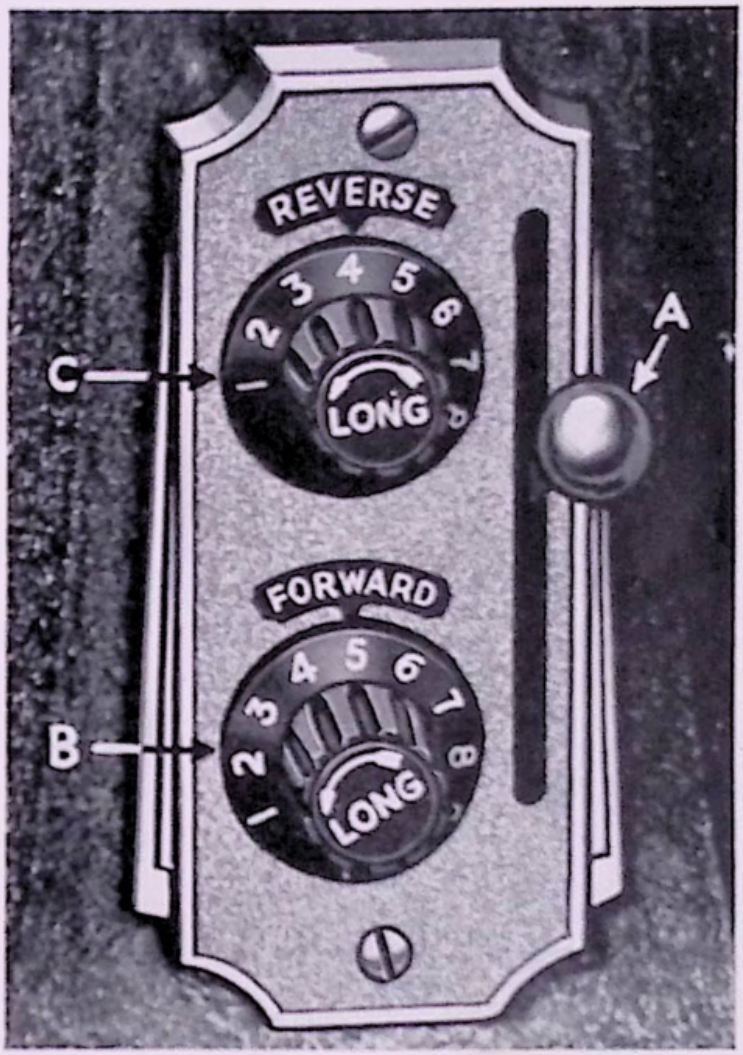


FIGURE 14

REMOVING SHUTTLE

See Figs. 15-16. Remove hand hole cover; then remove bobbin case, and tip the sewing head back on its hinges. Next, turn the disc wheel by hand until the **point of the needle just enters the needle plate hole.** Then push rear end of latch (L), releasing the shuttle race cover on one end, allowing the other end to be easily removed from under pin (X). The shuttle can then be removed by taking hold of its center pin (CP) with thumb and first finger.

When shuttle has been removed, clean it thoroughly, being sure that no thread is wound around center pin (CP). Also clean the shuttle race cover and the shuttle race (SR), carefully removing any threads or lint that may be in it, and be especially sure that driving pins (DP) are clean. Before replacing, place a drop of oil on tip of finger and apply on outer edge of shuttle and shuttle race and center pin (CP).

REPLACING SHUTTLE

See Figs. 15-16. With the head tipped back on its hinges, turn the disc wheel by hand until the **point of the needle just enters the needle plate hole** and so the arrow and the word "top" is exactly in the position shown. With the thumb and first finger of the left hand take hold of the center pin (CP) and hold the shuttle exactly in the position as shown in Fig. 16, so the word "top", stamped on shuttle, lines up with the word "top" in driver, then the driving pin holes (DPH) will slide over driving pins (DP) easily, and **without forcing,** allowing the rim of the shuttle to enter the shuttle race readily. The shuttle race cover will then go into place easily, the fork at one end fitting back of pin (X) and the slot in the other end passing over latch (L) which will snap back to its holding position when the shuttle race cover is pushed back into place.

Be certain of the position of the needle and arrow before attemping to replace the shuttle, and **do not force any of these operations,** as the entire assembly goes together very smoothly if the parts are properly placed.

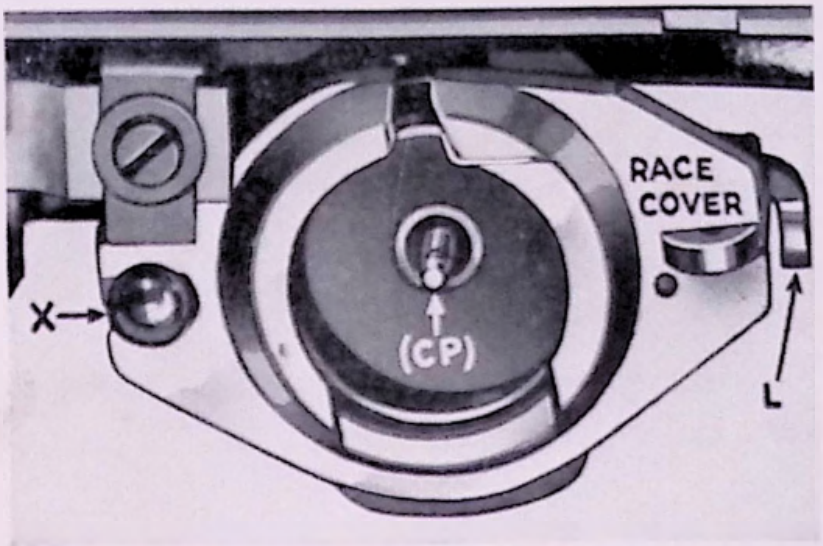


FIGURE 15

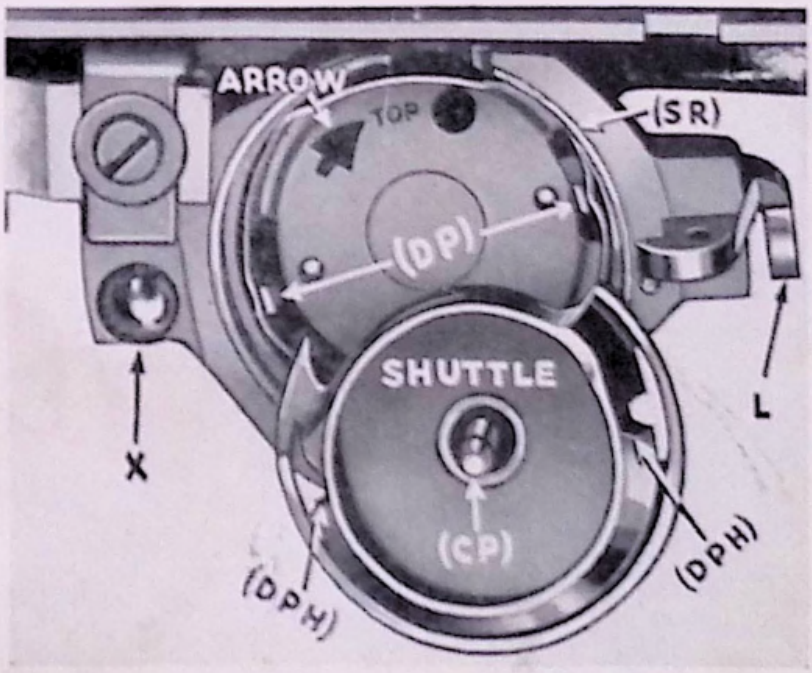


FIGURE 16

THE ATTACHMENTS

In the following pages of this manual there are many suggestions covering a variety of beautiful and worthwhile sewing that the user of a WHITE ROTARY ELECTRIC can now enjoy doing with this machine and its complete complement of attachments.

The machine itself is remarkable. Neither its operation nor that of the various attachments is either difficult or complicated. Yet in their use, one quickly gains the facility for doing every conceivable kind of beautiful sewing, with all the daintiness of expert hand work, yet having the perfection of mechanical precision—and without valuable time begrudged from other enjoyable occupation.

IMPORTANT

Most of the attachments used with this machine must be attached to the presser bar in place of the regular presser foot. To remove the presser foot from machine, raise the take-up to its highest point, loosen knurled thumb screw on presser bar. When replacing presser foot or putting on any attachment be certain it is pushed back onto presser bar as far as it will go. Always be sure that knurled thumb screw is tightened securely. It may be necessary to readjust tensions when using certain attachments.

THE NARROW HEMMER

A tiny hem, whether plain or trimmed, is a delightful finish to any garment as well as being a simple accomplishment.

Substitute the Narrow Hemmer for the presser foot. Fig. 17 shows a narrow hem being turned and stitched through the narrow hemmer. DMC Floss No. 3 is used on the bobbin for this stitching with bobbin tension loose.

Enter edge of material into hemmer from the left and allow it to encircle scroll of hemmer with edge of fabric just turned as it enters scroll at right.

There should be no second turn visible in fabric before it enters scroll if a dainty hem is desired. Too great a turn results in a clumsy hem.

To trim a hem with contrasting color as illustrated, complete hem's first stitching, then start work from other end and enter edge of hem in hemmer from the right. The hem will fill the scroll and stitching will appear at extreme edge.

For this type of stitching a loose bobbin tension is required with machine stitch set fairly long.

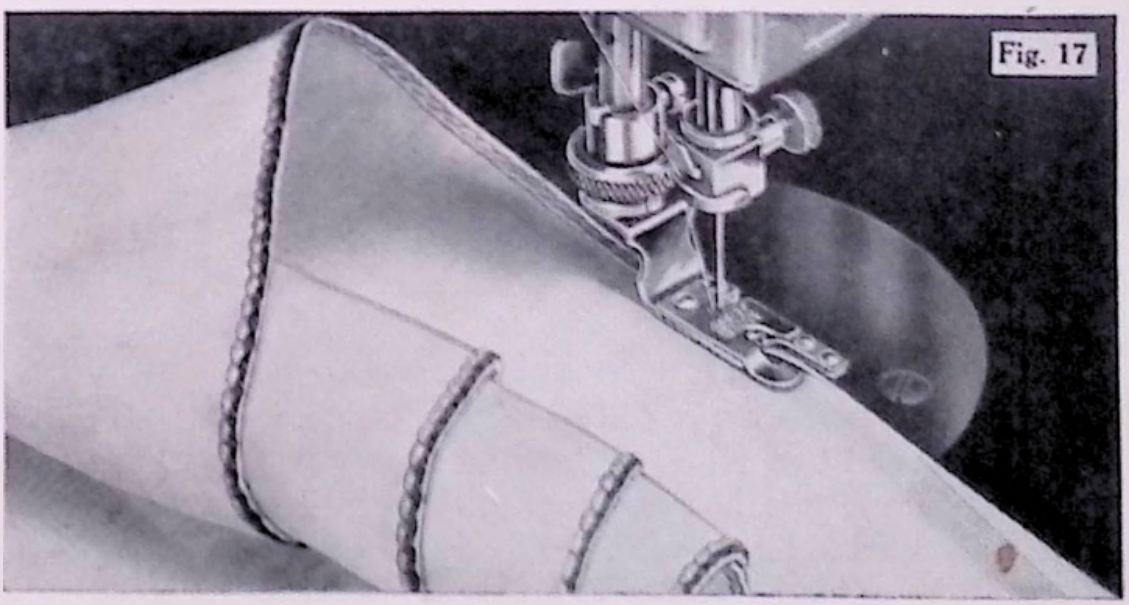


Fig. 17

HEMMING AND LACE TRIMMING

The Narrow Hemmer when used for finishing and trimming eliminates many hours of labor as well as being an assurance against poor workmanship when other methods are employed.

Enter edge of material in hemmer as previously instructed for regular hemming.

Slip straight edge of lace into slot cut in hemmer for this purpose from the right, guide edge of lace along edge of slot evenly with the right hand. Use left hand to guide hemming.

One single stitching finishes hem and applies trimming to the wrong side of fabric.

APPLYING LACE (FRENCH STYLE)

Applying lace edge in this method is termed "French application" due to the fact that when hem is pressed back onto wrong side of fabric no stitching is visible. It is also possible to have a little fullness in lace when applied in this manner.

Enter material to be hemmed as described for regular hemming but with right side of material face up.

Draw fullness up in lace by pulling one of the straight threads that form the selvedge. Enter this edge in hemmer from the left allowing the right side of lace to lie on right side of material as it is being hemmed. Feed lace edge into hemmer sufficiently so that the stitching in hem of fabric will hold lace at the same time.

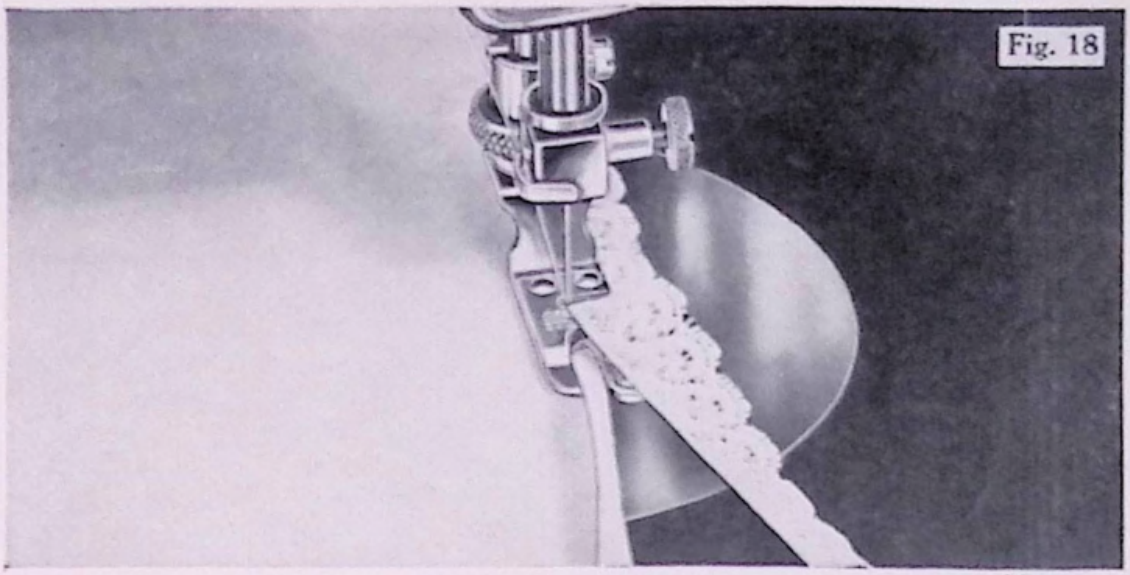


Fig. 18

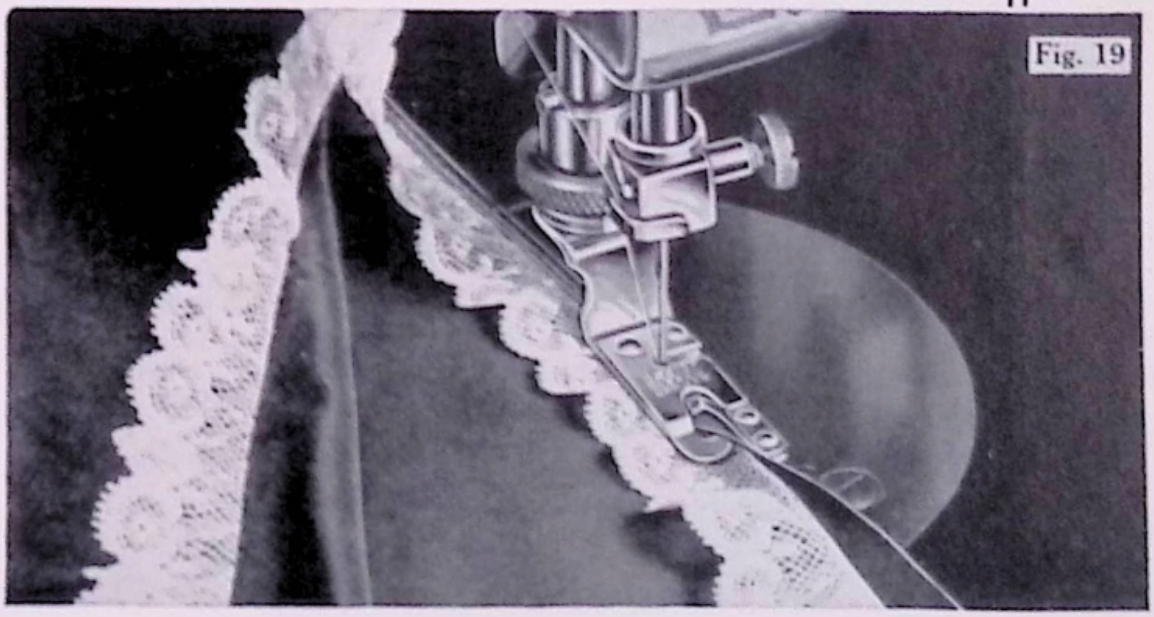


Fig. 19

THE HEMMED FELL

A felled seam of double strength is possible if the narrow hemmer is used as a guide for both stitchings. Place fabric to be seamed together with right sides facing and lower edge of seam extending $\frac{1}{8}$-inch beyond upper as it is placed on machine. Feed both seam edges into the hemmer so that in stitching, the edge of upper section will be enclosed in the hem being turned in under section. The seam thus finished is termed a French seam. To fell this seam open fabric and crease seam so that turned edge of hem will be enclosed. Enter hem again in scroll of hemmer so that edge of hem feeds through hemmer scroll from the right as shown in illustration. The second stitching will then appear at extreme edge of turn with no guiding necessary.

THE SET OF HEMMERS

The wide hem being turned and stitched in Fig. 21 suggests only one size obtainable with each of the several hemmers contained in your set.

Attach hemmer of desired size to machine in place of presser foot.

These wide hemmers carry the fabric in a slightly different manner than described for the narrow hemmer.

Turn over for about 2 inches toward the wrong side about $\frac{1}{8}$-inch along the edge of material to be hemmed.

Enter material in hemmer from the left and gradually feed it around and up toward the right until "spoon" portion is completely enclosed. Now draw material back toward you allowing the crease on turned edge of fabric to fit around edge of spoon.

In this manner the hem can be drawn back until needle enters extreme edge of material being hemmed. Hold onto both lower and upper thread and stitch in usual manner.

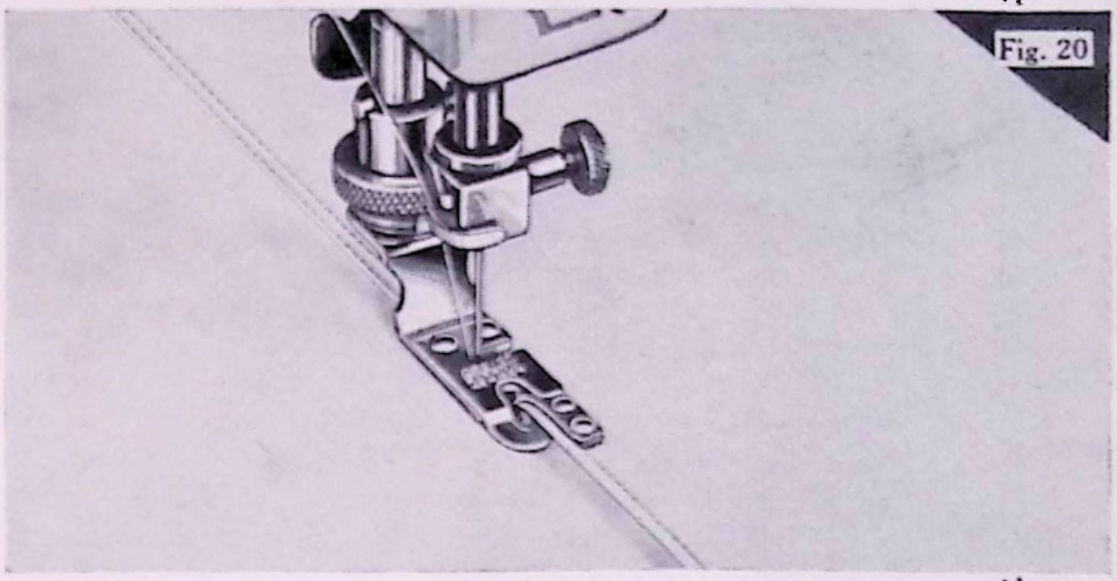


Fig. 20

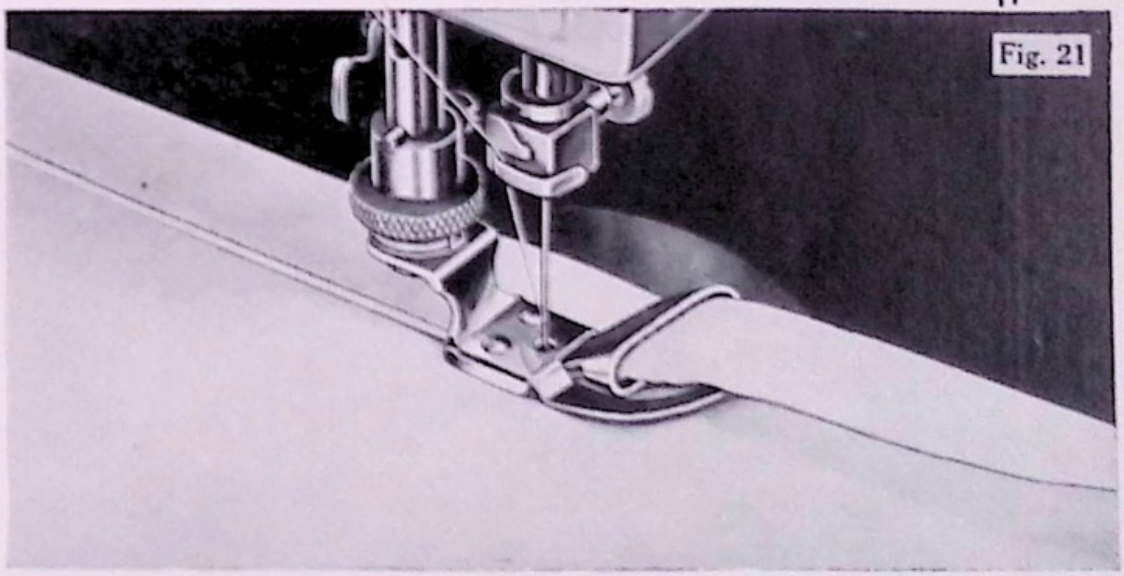


Fig. 21

COMBINATION TUCKER, EDGESTITCHER AND TOP BRAIDER

The attachment is fastened to machine in the same manner as the presser foot.

The five slots shown in the illustration serve as guides for piping and accurate stitching to appear at edge of folded fabric or lace edges when joined.

Slots 1, 2 and 4 are used when edges are to be joined daintily with no seam allowance. Slots 1 and 5 are used when a seam is required beyond the stitching. The folded edge is placed in slot 1, the raw edge or seam width is placed in slot 5.

Slot 3 carries piping which has been folded and cut ¼-inch wide. If folded edge faces the left a ⅛-inch piping will appear. If edge is reversed a 1/16-inch piping will appear.

This attachment is adjustable sidewise. Move lug "A" to right or left until stitching appears at edge of fabric where desired.

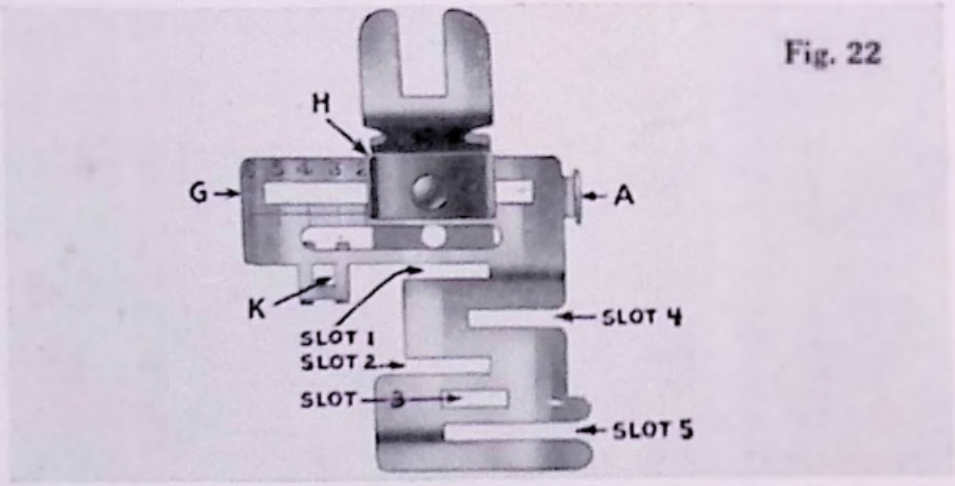


Fig. 22

WIDE TUCKS TRIM STITCHED

Tucks that range in size from pin width to ¾-inch can be stitched accurately when the Combination Attachment is used. Commercial patterns always perforate for a tuck crease and suggest its size.

The numbers 2 to 6 inclusive stamped on the back edge of the sliding guide (G) (Fig. 22) represent the width of tuck in eighths of an inch. After folding the material for the first tuck, introduce the folded edge into the guide slot which is nearest the needle. When the left hand edge of the friction spring (H) coincides with the number 2 on the scale a $\frac{1}{4}$-inch tuck results.

In like manner:
Set the guide at 3 for a $\frac{3}{8}$-inch tuck
Set the guide at 4 for a $\frac{1}{2}$-inch tuck
Set the guide at 5 for a $\frac{5}{8}$-inch tuck
Set the guide at 6 for a $\frac{3}{4}$-inch tuck

Fig. 23 shows the widest width tuck stitched with No. 3 DMC on the bobbin.

Pattern perforations on a $\frac{3}{4}$-inch tuck are usually spaced $2\frac{1}{2}$ inches apart so that when stitched, tucks are closely spaced yet not crowded. To further enhance these tucks a row of DMC is stitched to the extreme edge of tuck as shown in Fig. 23. Set attachment so that edge of slot 1 is directly in front of needle for decided edge stitch.

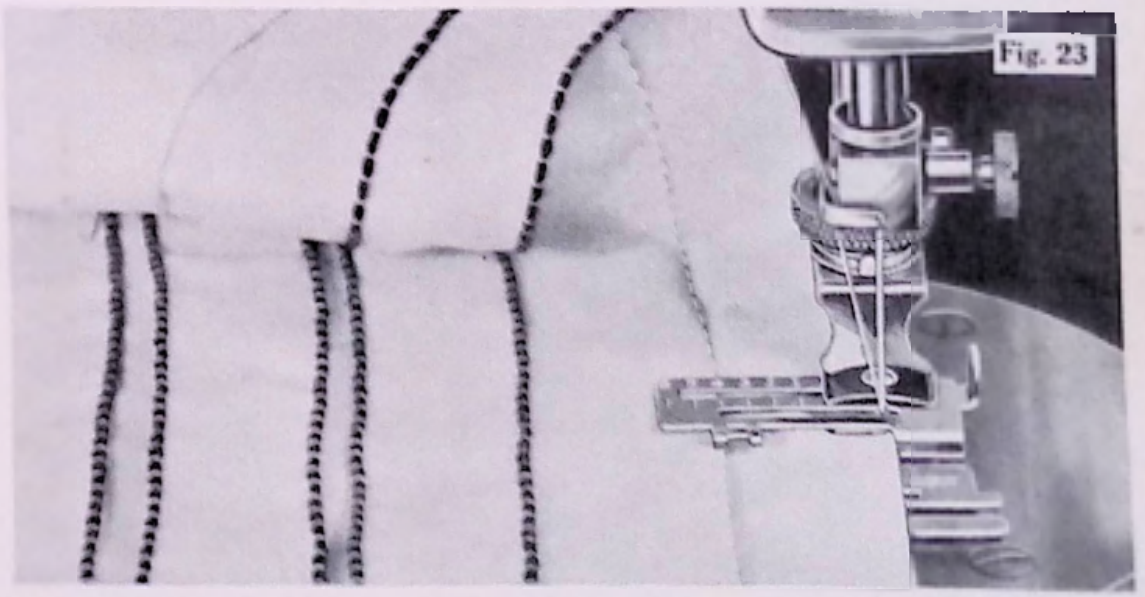


Fig. 23

THREE EDGES HELD IN ONE STITCHING

Slots 1, 2 and 4 are utilized to advantage when it is necessary to face a garment that is being lace trimmed.

Set attachment so that edge of slot 1 is directly in front of the needle. This means that turned edge of garment is placed in slot 1, lace edge in slot 4 with binding facing edge in slot 2; thus 3 edges are held correctly in one single stitching as clearly portrayed in Fig. 24.

When sewing laces or soft materials together, it is better to hold the edges slightly overlapped. This will prevent the lace from feeding away from guide.

When the attachment is properly adjusted, the most inexperienced operator may sew yards of lace or material together with no difficulty.

TOP BRAIDING AND EMBROIDERY

Braids such as soutache or floss of the same size can be applied to fabric in designs that are most attractive. Fig. 25 shows silk soutache being applied to rayon taffeta.

By moving lug "A" draw the edgestitching portion of attachment toward the right and set braiding guide "K" directly in front of the needle so that needle pierces the center of trimming as it is being stitched. Enter the braid into the hole K (Fig. 22). The design to be braided should be plainly marked or stamped on the top or right side of fabric. Stitch along this design, being sure that the soutache braid is feeding freely into the hole K without twisting. To turn a corner, stop the machine with the needle down through the braid in the exact corner of the design, raise the presser bar just enough to permit the turning of the fabric in the desired direction, lower the presser bar and proceed as before.

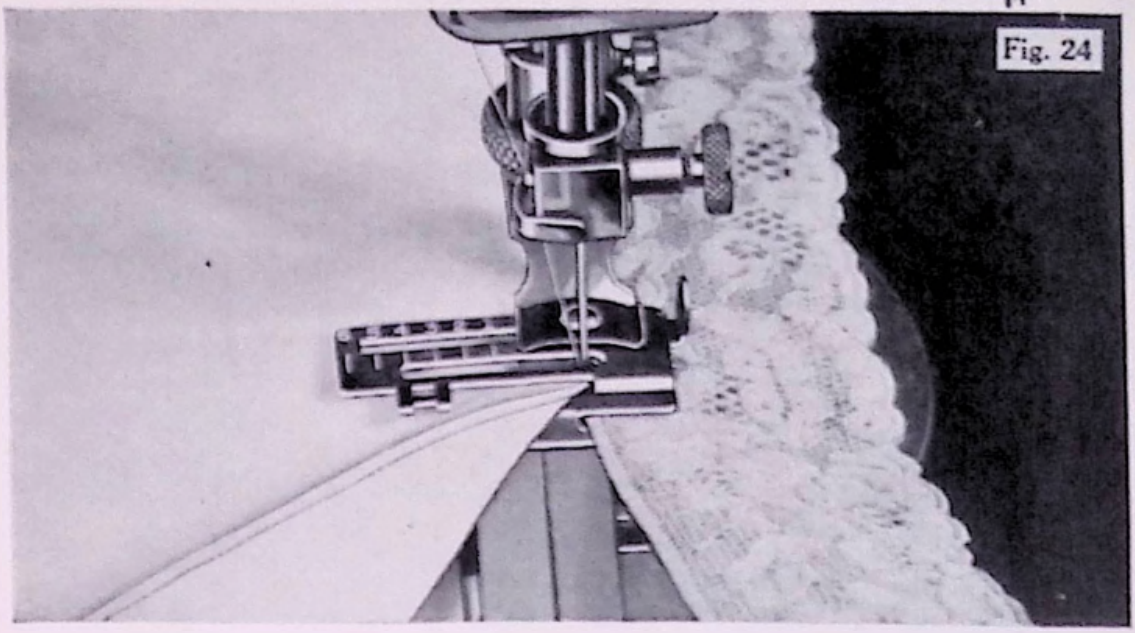


Fig. 24

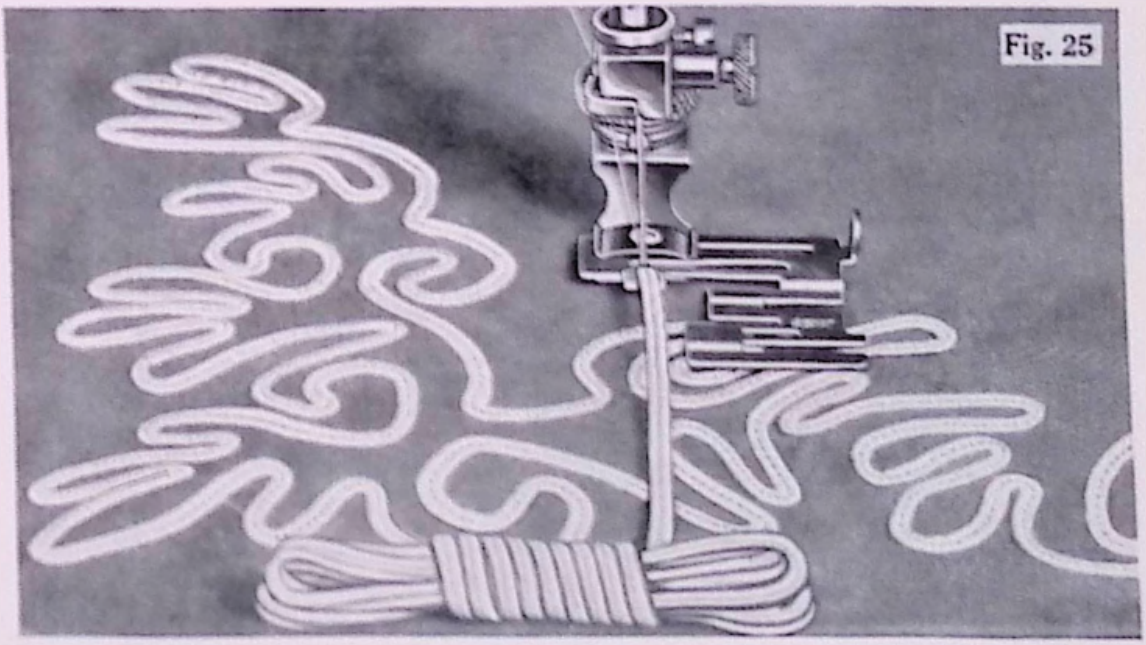


Fig. 25

THE FIVE STITCH RUFFLER

Letters in Fig. 26 designate the parts of Ruffler.

Figures indicate the placement of materials.

A — Foot which is attached to Presser Bar.

B — Fork Arm. The section placed astride the needle clamp screw.

C — Adjusting Screw. Used to regulate the fullness of pleats and gathers.

D — Five Stitch Lever. Used for setting a five stitch pleat.

E — Lever. Adjusts for pleats or gathers in groups by throwing Ruffler into neutral.

F — Seam Guide.

G — Sliding Guide. Used to vary size of headings.

H — Piping Guide.

I — Edge Guide. Used to determine a close edge stitch on material when ruffle is entered from the right.

J — Screw. Used to set edge guide.

K — Adjustable heading guide.

M — Lip which separates seam guides.

N — Blue spring over adjusting screw.

Line 1 — Is under the ruffler and indicates the position for the garment or band to which ruffle is sewed giving a ¼-inch seam.

Line 2 — Between the blue blades where the feed blade will gather or pleat material with a ¼-inch seam.

Line 3 — The upper piece of material used when ruffle is sewed between two pieces of material.

Line 4 — Guide for piping strip.

Line 5 — For edgestitching material to ruffle that is entered from right.

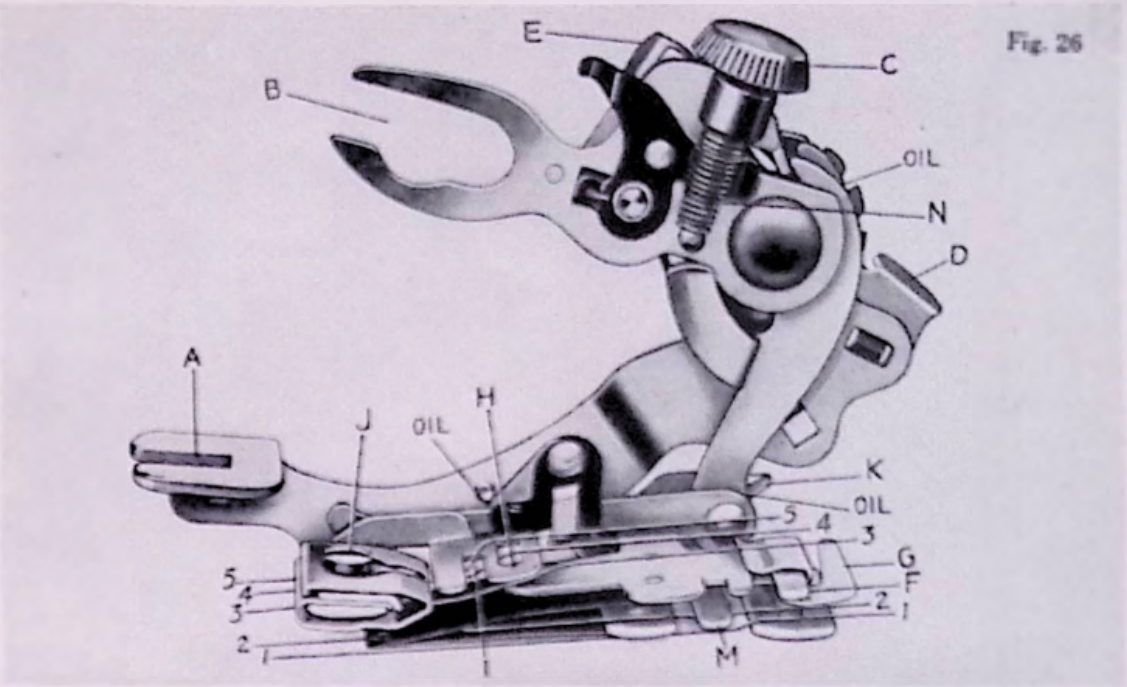


Fig. 26

GATHERING

Remove presser foot from machine. Attach Ruffler in its place by placing the foot of Ruffler "A" on attachment holder at the same time that fork arm "B" is fitted astride the needle clamp screw. Push Ruffler forward and tighten thumb nut screw securely.

Turn disc wheel to determine that needle goes down in center of needle hole of Ruffler.

It is possible to gather ruffles at extreme edge, varied sizes of seam widths or with headings up to 1 inch in width. Figure 27 refers to 3 of the settings—gathering at extreme edge, the adjustment of which is governed by the Sliding Guide "G". The ¼-inch heading which is guided through Line 1. A ½-inch heading governed by the setting of Adjustable Heading Guide "K".

Material to which ruffles are applied is placed under the Ruffler.

The material to be gathered is entered between the blue blades of Ruffler following Line 2.

The amount of fullness obtainable in a ruffle is governed by the length of stitch on machine and the setting of Adjusting Screw "C" on Ruffler. A short stitch set at 2 or 3 calls for fine gathering, the longer stitches result in coarser gathers.

To regulate fullness in ruffle turn adjusting screw "C" down for greater fullness, up for less fullness.

To ascertain how much material will be gathered into a ruffle, after fullness has been determined, gather a length into 10 inches. Rip out the gathers and measure —if the plain material is now 15 inches long you require one and one-half times the amount of ruffling as the space to be trimmed with ruffles.

SINGLE STITCH PLEATING

Very attractive pleatings are produced with the Ruffler set for pleating.

Turn adjusting screw "C" down as far as possible. This setting produces the largest pleat and when 5 Stitch Lever "D" is not in operation a pleat will be produced with every stitch of the machine—this is called **single stitch pleating.** Set machine stitch from medium to long for this work. Too short stitch will crowd the pleats.

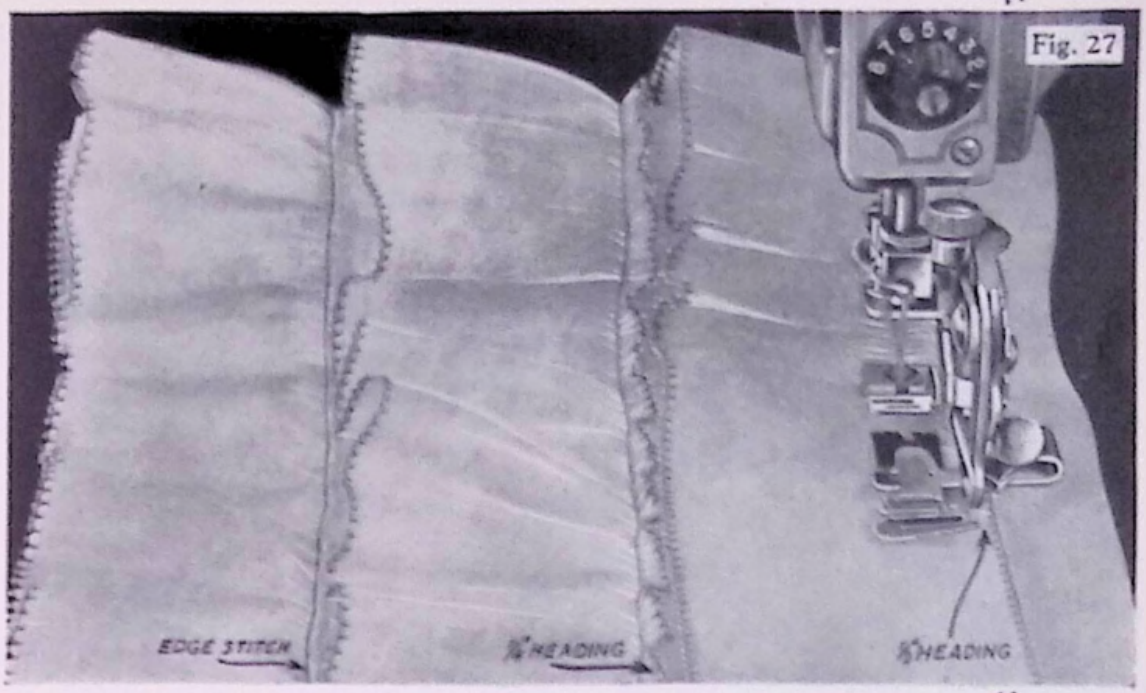


Fig. 27
EDGE STITCH
⅝" HEADING
⅝" HEADING

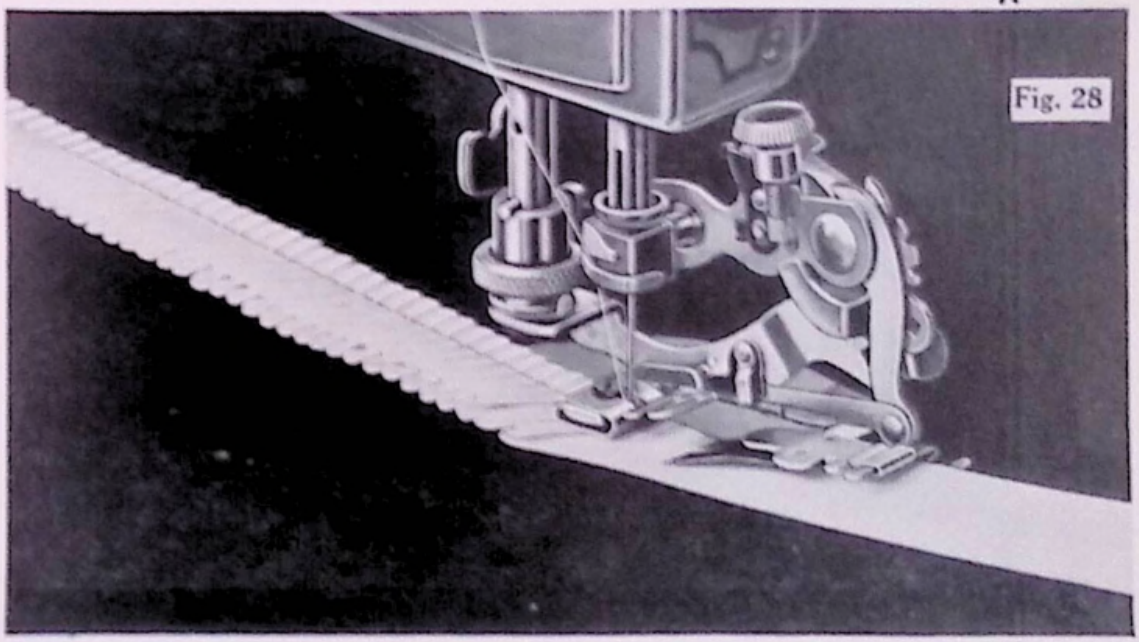


Fig. 28

FIVE STITCH PLEATING

A pleat after every 5th stitch is obtained by pulling 5 Stitch Lever "D" up toward you. This sets the Ruffler for a pleat after every 5th stitch.

To apply a pleated ruffle as shown in illustration enter garment to be trimmed under Ruffler guiding its edge through "Line 1". The ruffle to be pleated is entered between the blue blades following Line 2, seam edges will line perfectly when guided under lip "M". This work is called **5 Stitch Pleating.**

SHIRRING

The Shirring Plate must be used when it is desirous to make wide ruffles, deep headings on ruffles or for shirring in continuous rows.

Remove hand hole cover plate; insert ear "YY" of the Shirring Plate into the gauge screw hole in needle plate. and by holding down the Shirring Plate replace the hand hole cover over ear "XX" on the Shirring Plate as shown in Fig. 30.

Prepare the Ruffler to be used with the Shirrer by freeing the blue screw at right and drawing back on separator, thus removing the lower blue blade. Tighten screw again to prevent its loss.

Attach Ruffler to machine as previously described. Place material to be shirred between the Shirring Plate and the ruffler feed blade. Set Ruffler for fine gather and shirr at any desired distance from edge of material.

Guide material carefully to insure its even travel through ruffler by smoothing its fullness at the left as it enters ruffler.

Use the Quilter Guide for spacing rows of shirring evenly.

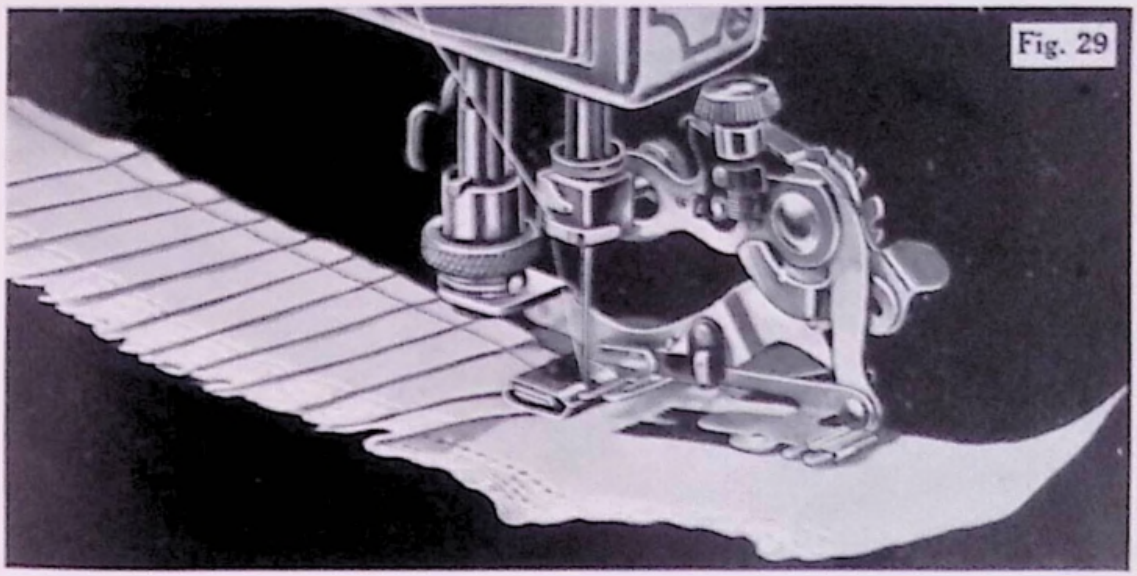


Fig. 29

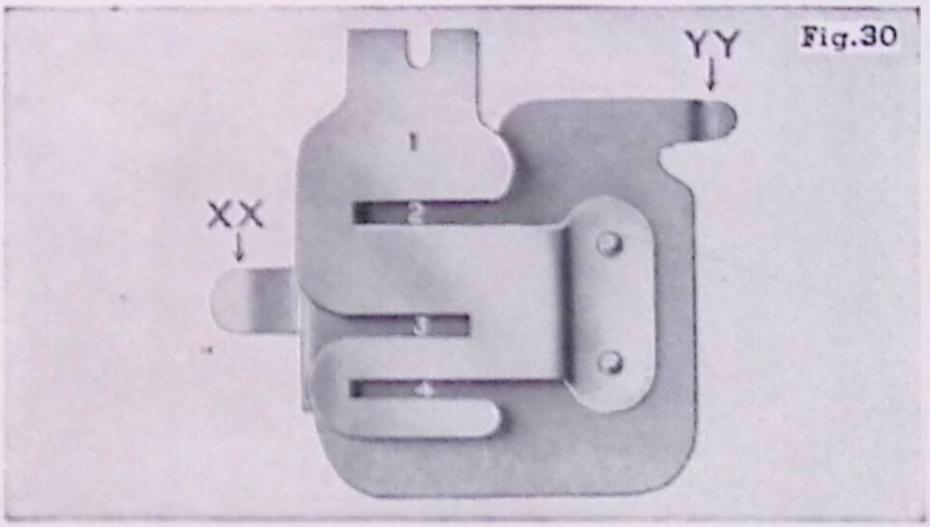


Fig.30

APPLYING A DEEP FLOUNCE

Gathering a flounce and joining it neatly to a finished edge in one single stitching is possible when the Ruffler and Shirrer are used.

Attach Shirring Plate and Ruffler to machine as previously instructed. Set Ruffler for gathering.

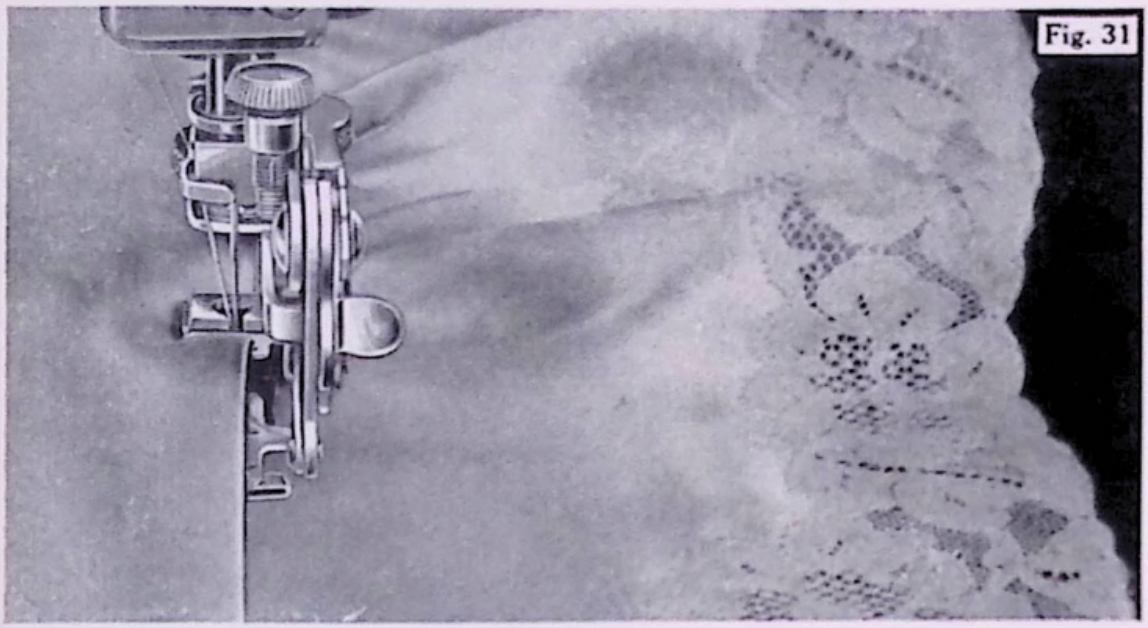


Fig. 31

Enter edge of flounce between ruffler and shirring blade and in slot 4 from the right.

Enter turned edge of garment to which flounce will be joined in edge guide "I". Start to stitch and note where stitching line appears on garment. A slight adjustment can be made for this stitching by freeing screw "J" and moving edge guide assembly to the desired position.

Tighten screw before proceeding.

GROUP PLEATING

Pleats set in groups make a very popular ruffle trimming as well as a saving in yardage when ruffled curtains are in the making.

With the Ruffler set for 5 stitch pleats and machine stitch set fairly short, clusters of pleats can be grouped so that pleats are very nearly touching each other. Fig. 32 suggests pleats in groups of five.

To apply a wide ruffle as illustrated the shirring plate must be used with the Ruffler.

Remove separator from Ruffler by freeing the blue screw at right side and drawing separator back. Tighten screw to prevent its loss. Attach Shirring Plate to machine as previously described. This plate is used in place of the separator when a wide ruffle is to be applied.

Enter edge of fabric to be trimmed under the Shirring Plate from the left guiding its edge through slot 3.

Enter ruffle from the right under the blue blade of Ruffler guiding its edge through slide guide "G" with guide adjusted for the desired heading.

Proceed to stitch 5 pleats in the first group then move Lever "E" forward and out of operation. Stitch until the desired plain space between pleats is covered then replace Lever "E" for its pleating duty and continue to stitch.

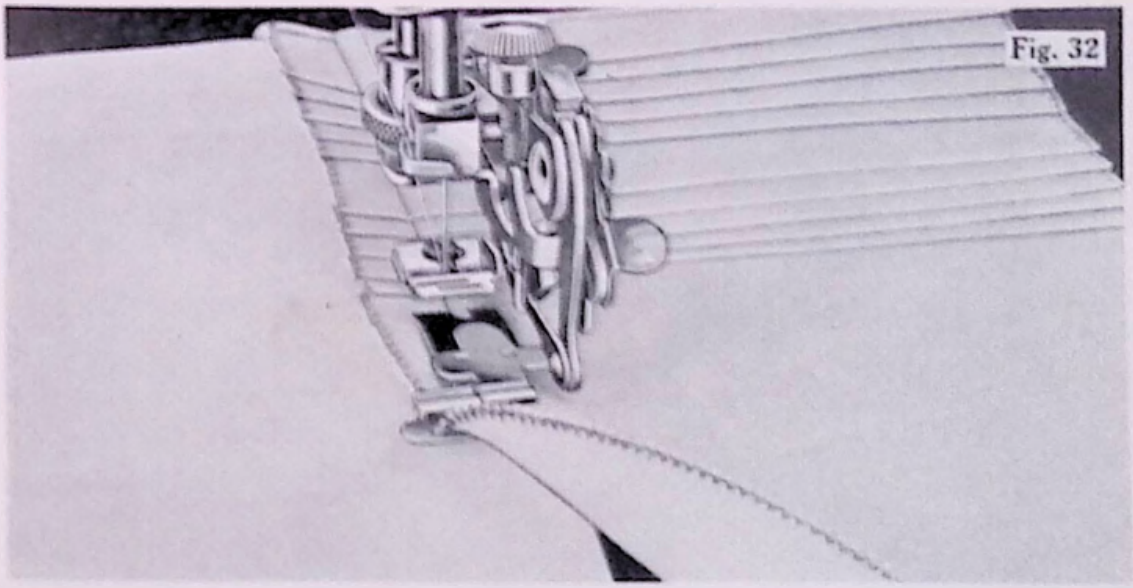


Fig. 32

GARMENT PIPED AND EDGESTITCHED TO PLEATING

Attach Ruffler to machine and set it for 5 stitch pleat as previously described.

The ruffle to be pleated is finished $1\frac{1}{4}$ inches wide and entered between the blue blades of the ruffler from the right with its edge in seam guide following Line 2. Piping that has been folded and cut $\frac{1}{4}$-inch wide is entered in guide "H" with folded edge toward the right.

Turned edge of garment is entered in edge Guide "I" following Line 5.

With the correct adjustment of edge guide the stitching will appear neatly at the edge of garment while piping and pleating are being applied with but one stitching.

PIPING AND ENCLOSING RUFFLE IN FACING

Fig. 34 shows a four operation job being accomplished in one by using the Ruffler.

Attach Ruffler to machine as previously described and set it for gathering.

Place edge of garment to be trimmed under Ruffler from the left following Line 1 and over Lip "M". Enter ruffle to be gathered between blue blades following Line 2 with edge in slide guide "G".

Cut a decided point in the piping that has been folded and cut $\frac{1}{4}$-inch wide and enter it in the piping guide "H" with fold of piping toward the left. Place facing over all following Line 5 but guiding its seam edge along slide of ruffler.

Turn facing over to wrong side and fasten to garment.

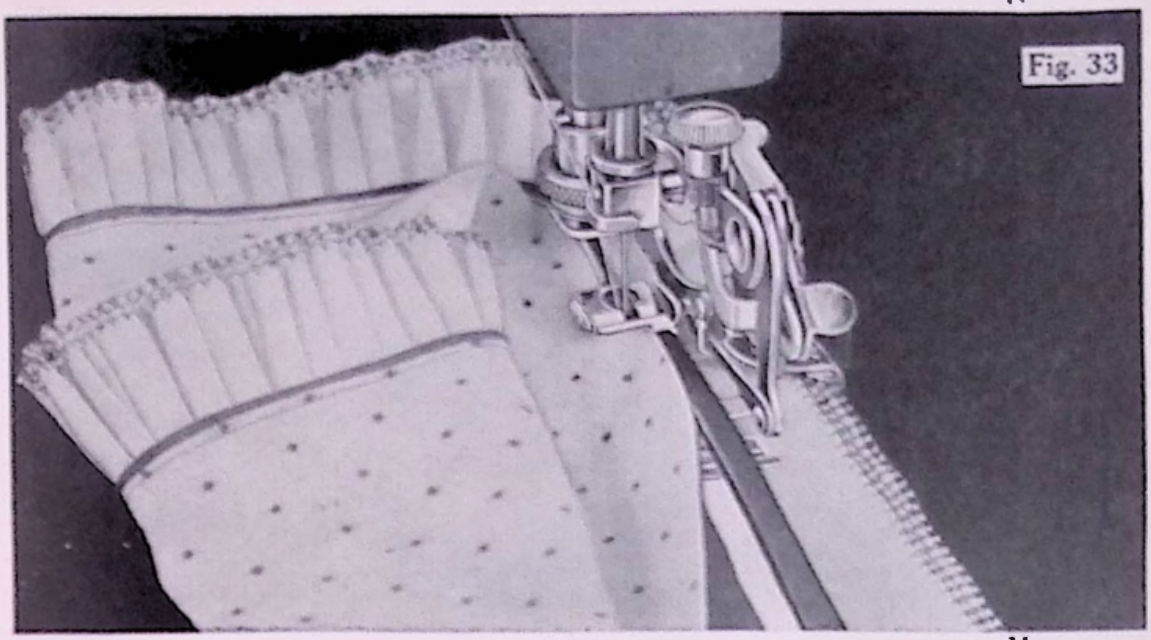


Fig. 33

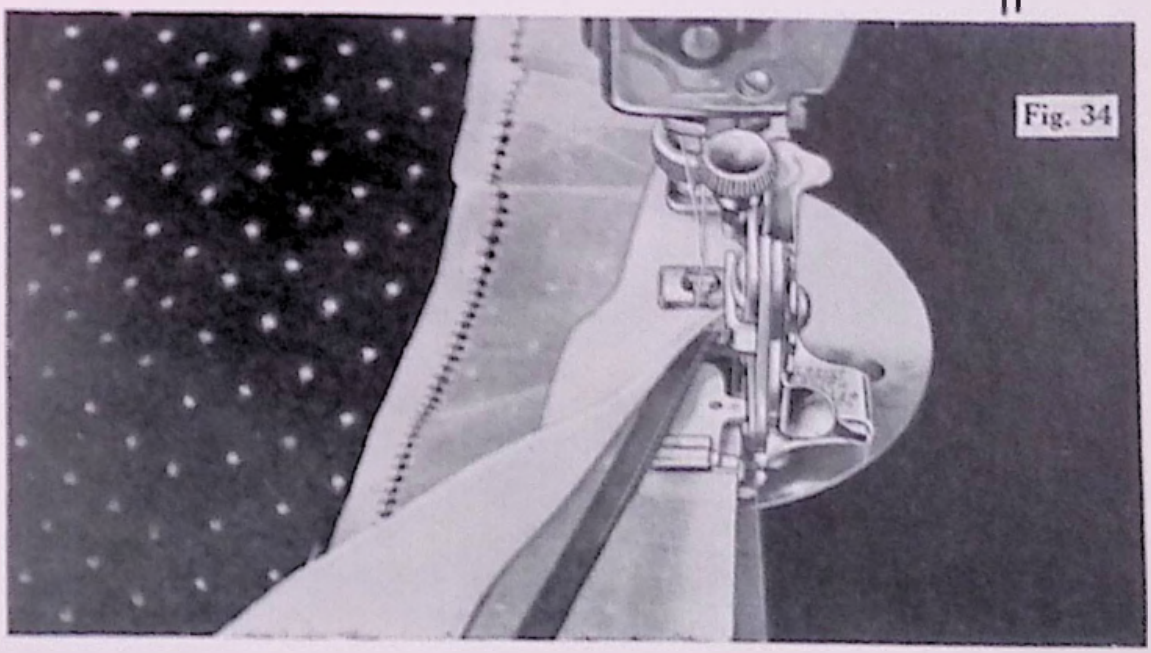


Fig. 34

FOUNDATION SHIRRING

Shirring as a foundation for smocking is illustrated in Fig. 35.

The Ruffler set or single stitch pleat is used with the Shirrer.

Attach Shirring Plate to machine as previously instructed. Prepare Ruffler and attach to machine.

Set Ruffler for gathering.

Thread the bobbin of machine with mercerized DMC Floss No. 3 keeping the tension loose. Set machine for a long stitch and thread with stitching silk that contrasts strongly with color of DMC so that each stitch of bobbin thread will stand out clearly as a trim.

Use Quilter Guide for evenly spaced rows of shirring.

Select the stitch best suited for the type of smocking called for and you will find each pleat evenly spaced and ready to be joined to its companion in either the very familiar diamond shape or visible fagot stitch.

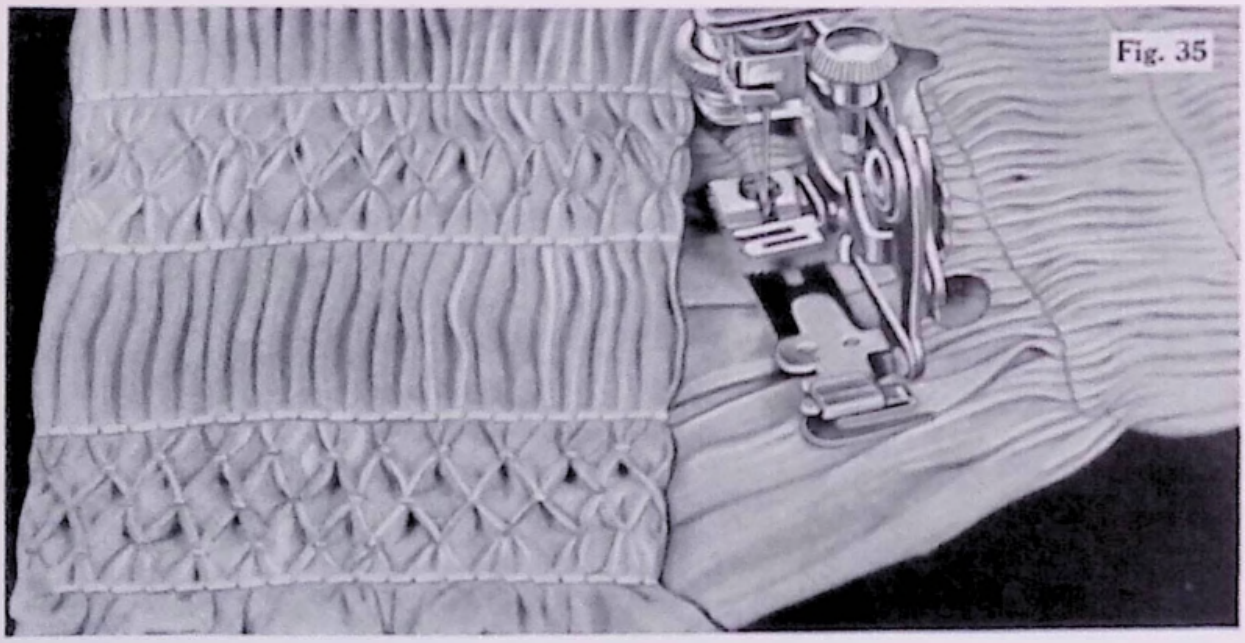


Fig. 35

MAKING BIAS BINDING

First make a true bias of the material to be used for binding by meeting the warp (or length of material), to the woof (or cross of material).

Cut material carefully through crease where corners fold thus obtaining two sections of true bias. Figs. 36-37 very clearly explain this work.

To cut material into strips to be used with the Binder, insert bias edge of material into Cutting Gauge.

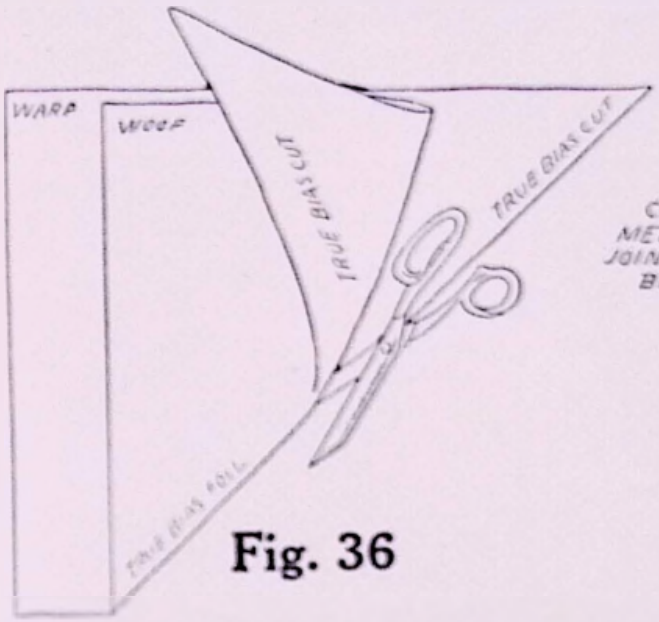


Fig. 36

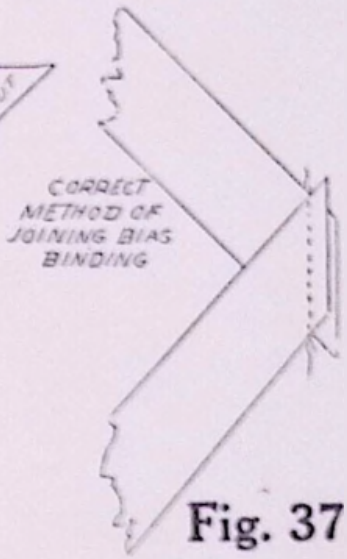


Fig. 37

CUT MATERIAL SUFFICIENT TO DO ALL BINDING

Strips of binding can be neatly and correctly joined by meeting the right sides of material and laying the length, or warp ends, across each other with the points projecting the same width as seam desired.

Start stitching at angle on grain of material, finishing at angle on other side of binding.

Press seam open and clip seam edge close to line of stitching.

THE CUTTING GAUGE

The Cutting Gauge is used as a guide when cutting bias bands for use as binding; or narrow bands either straight or bias to be used as facings, pipings, cording or narrow ruffling.

The inch and fractions thereof designated on the Cutting Gauge enables one to cut material of any texture perfectly for use with the Binder.

$\frac{7}{8}$-inch or $\frac{15}{16}$-inch is correct for firmly woven materials.

1-inch to $1\frac{1}{4}$-inches is correct for materials that stretch more readily.

Attach Cutting Gauge to lower point of scissors, move gauge slide to width of band desired. The gauge slide is adjustable and can be moved to the left or right. Insert the material to be cut between the blades of the Cutting Gauge with the edge of material against the slide, then cut, moving the scissors forward in short even clips.

It is important that bindings to be used with the Binder be cut on a true bias to produce perfect work. Only a true bias will stretch evenly.

Fig. 39

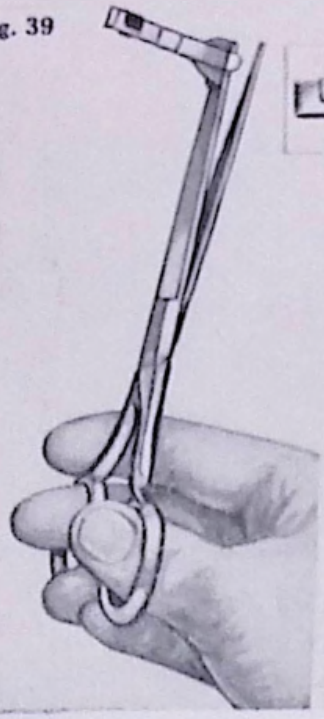


Fig. 38

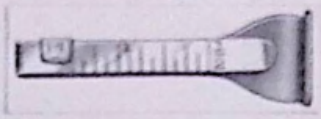
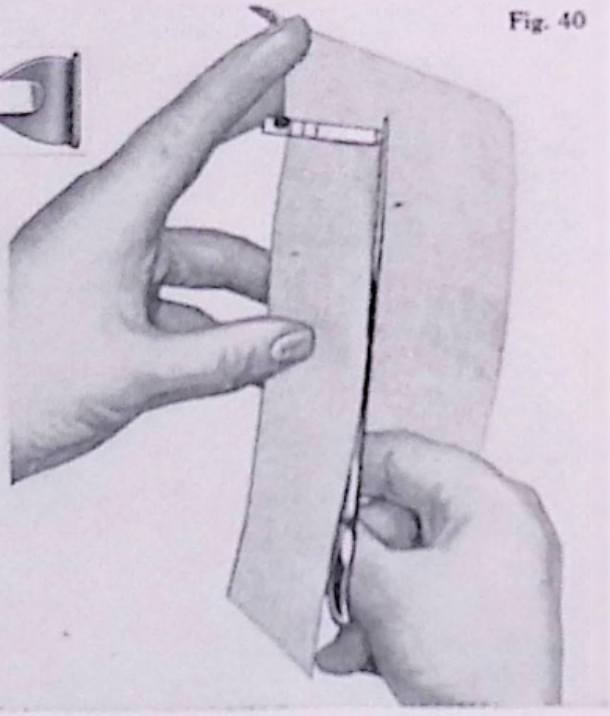


Fig. 40



THE MULTIPLE SLOT BINDER

Five slots are designed in the Binder Scroll for the purpose of carrying commercial single fold bindings of as many different widths ranging from size 1 to 5 inclusive.

Bias bindings cut $^{15}/_{16}$-inch wide of self or contrasting materials can also be used but must be entered through the open mouth of the scroll.

The single fold commercial bindings must be used in the slots of binder and it is well to note before entering them that the widest half of fold in binding is the lower half. A good quality commercial binding is thus folded to insure sufficient binding when curved edges are encountered.

Remove presser foot and attach Binder in its place.

Clip binding to a desired point and draw it through the slot designed for its width by using a strong pin. Draw binding beyond needle and stitch for a few inches to determine where stitching is desired.

The Binder is adjustable sidewise and can be moved to make stitching line appear at extreme edge of binding which is desirable.

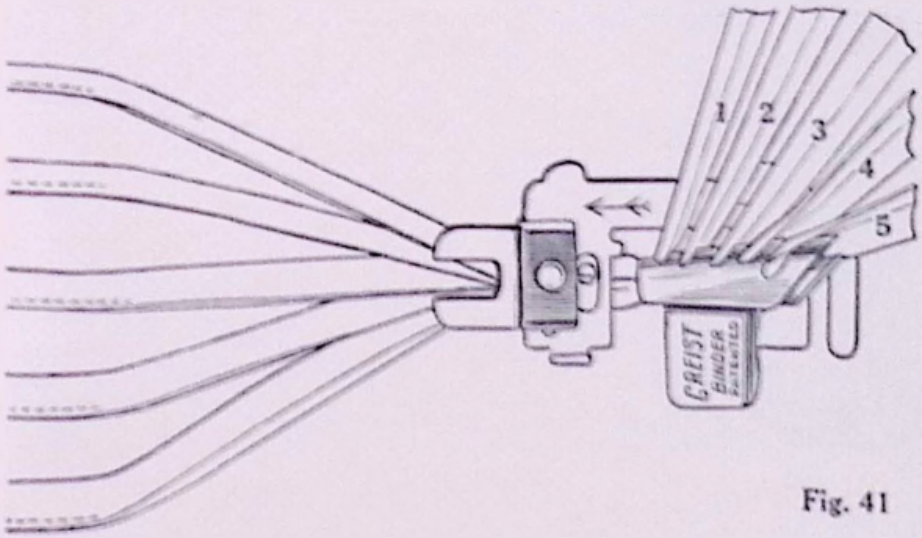


Fig. 41

THREE TONE BINDINGS

Fig. 42 shows in detail the use of three different colored bindings answering the need for a trim and finish that is reversible.

The bindings used for this net cascade are sizes 1, 3 and 5. Size 1 binding is entered in slot 1 first, size 3 second and size 5 last. Bindings size 5 and 3 show as a double piping on both sides of the cascade while size 1 encloses and holds the material being piped as well as the pipings. The material thus trimmed is entered between the scrolls of the binder and guided well into the scroll with the left hand.

Two-tone bindings are also very attractive and offer wide possibilities in the choice of color and size. When combining bindings always skip one size between each width being used.

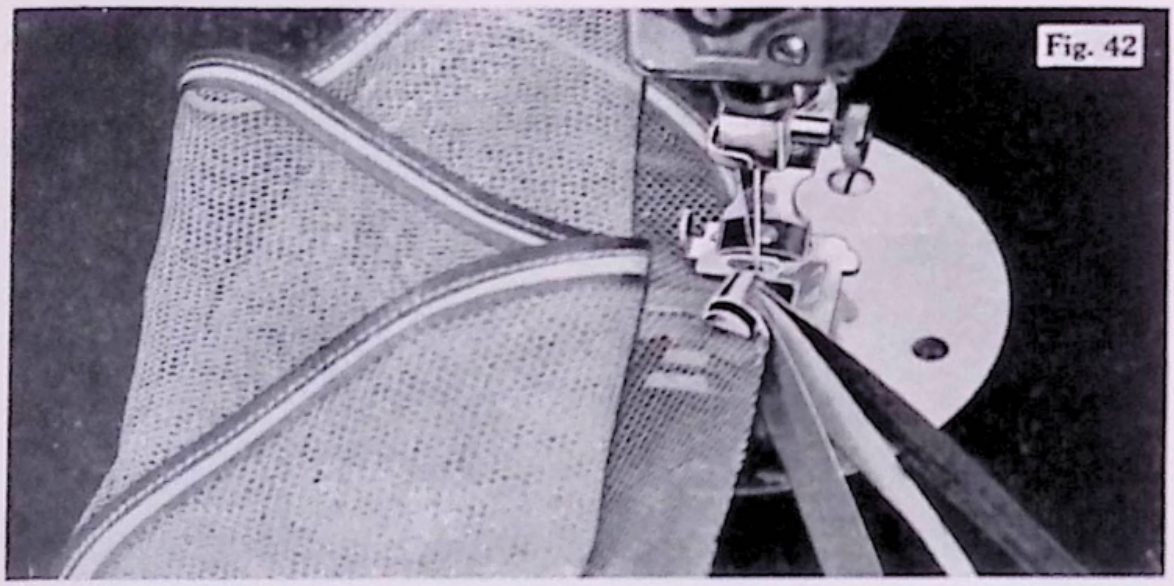


Fig. 42

BINDING SCALLOPS

Binding curves should offer no hardship when Binder adjustment is correct and material being bound carefully guided between the scroll of the Binder.

When binding small, decided curves as shown in Fig. 43 the material being bound is guided well into the Binder close to the needle. Use the third finger of left hand for this work and note how simply a curve can be bound while the finger rests on the apron of Binder.

The illustration shows how material appears as it is held by the stitching of binding. Never draw on the edge of a curve to force its full length between the scrolls.

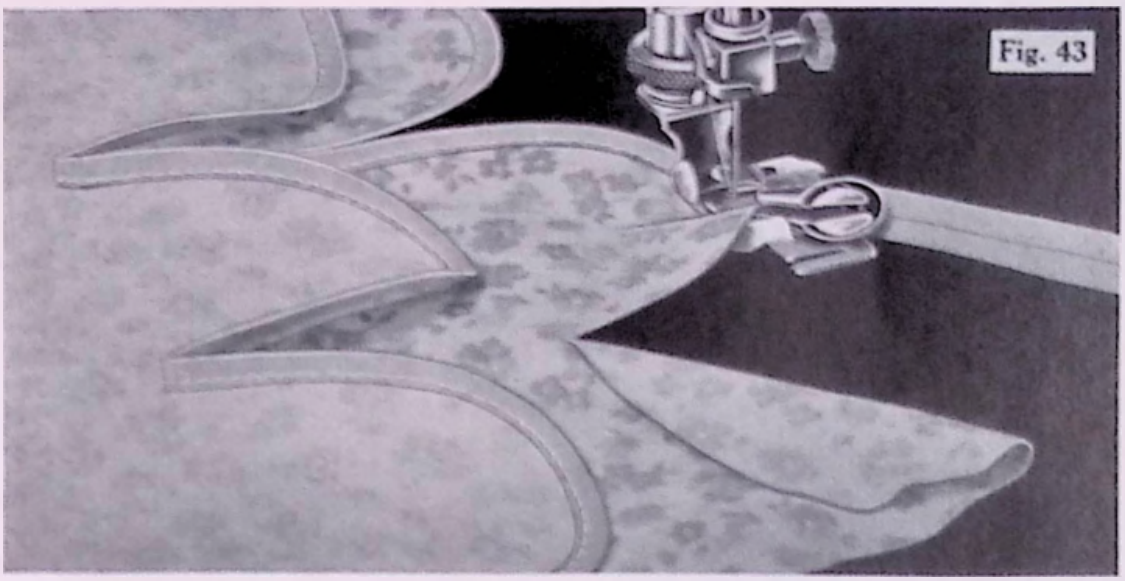


Fig. 43

BINDING AS A TRIMMING

Now that dainty bindings can be applied with a minimum of effort one will desire to trim with bindings where successive rows of trimming are desired.

After deciding upon the width of binding to be used enter it in the slot of Binder designed to carry it.

The garment to be trimmed is placed under the Binder using the outer or inner edge of Binder frame as a space guide between each additional row of bindings as it is being stitched.

QUILTING

When it is necessary to make many rows of stitching that run parallel to one another, the Quilter Guide makes this task a pleasure. It insists on keeping rows stitched evenly apart.

Remove Regular Foot and replace with Quilting Foot. Loosen screw in back of presser bar sufficiently to allow quilter guide wire to enter hole. Stitch the first row of stitching at point desired. Determine the spacing needed between each stitching. Set Quilter Guide for this spacing allowing the arm of the Quilter Guide to rest easily on the row of stitching while the needle pierces the material at the point set for each additional row. Tighten screw to hold Quilter Guide in place.

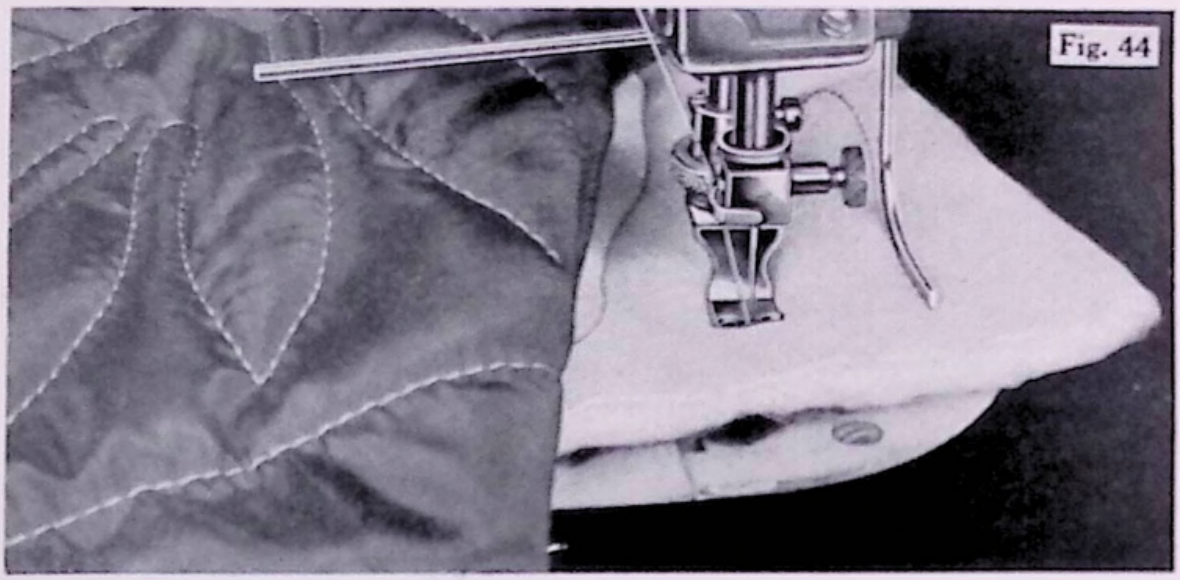


Fig. 44

When stitching a thickness of several sheets of wadding use a long stitch and fairly loose tension on the machine and use the Quilting Foot. If quilted stitching calls for slight puckering, place cheesecloth over the wadding and keep the right side of fabric down on bed of machine. The design for quilting is on the cheesecloth.

To trim stitch several thicknesses of closely woven materials such as broadcloth coatings, etc., loosen the Presser Bar Adjusting Cap Screw slightly so that no definite line of the foot's pressure or the feed imbedded into the material shows on the finished garment.

MACHINE DARNING

Set the machine for a short stitch. Release the pressure on the presser bar, turn the top knurled section of the presser bar cap (pressure release) Fig. 7, Page 9, one quarter turn counter-clockwise.

Hold the fabric taut, or insert in embroidery hoops, and pull forward then backward, then from side to side until the hole is completely filled.

When darning is completed, push down on the pressure release until it meets the lower section of the cap, then give the top one quarter turn clockwise, locking the cap securely.

THE SHIRRING FOOT

Wherever gathers are employed on a single thickness of fabric the task can be turned over to the Shirring Foot. Fig. 45 shows rows of shirring closely spaced in groups of four rows accomplished with the Shirring Foot.

The length of stitch and the tension control the fullness.

For fine gathers regulate your machine stitch for short stitching, to increase the fullness lengthen the stitch, for still greater fullness tighten the top tension slightly.

Carefully guide the fabric as it is being gathered so that at all times it feeds to the needle singly.

Use the Quilter Guide for evenly spaced rows of shirring.

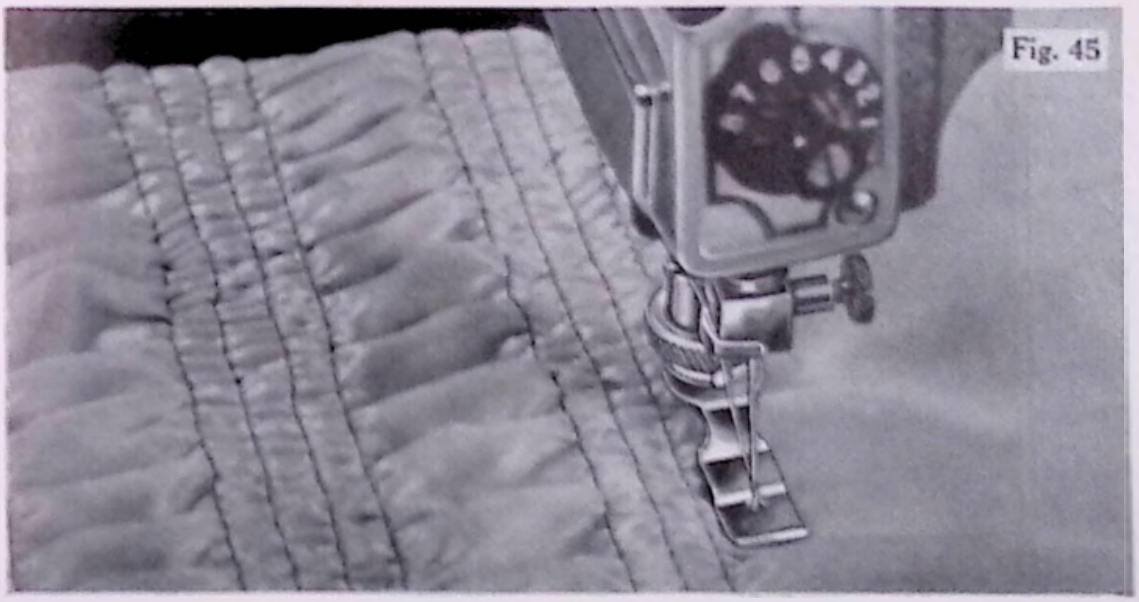


Fig. 45

CORDING FEET

The left and right toe Cording Feet are designed to allow the needle to stitch close to a cord or raised surface. Use the left toe (L) when the cord is to the right of the needle and the right toe (R) when the cord is to the left.

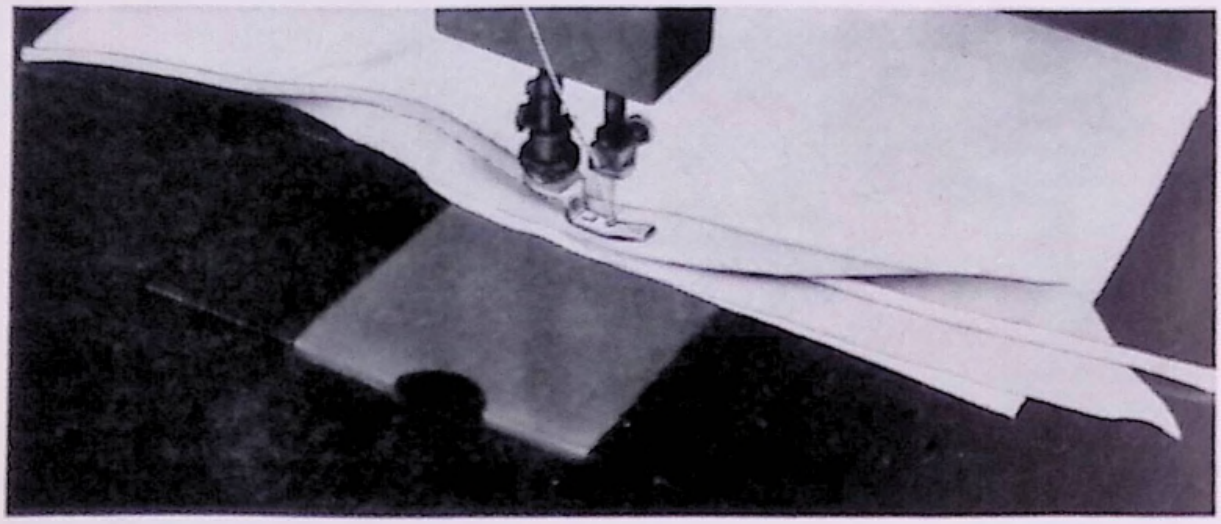


FIGURE 46

Remove the presser foot and attach the desired Cording Foot in its place. Fold a strip of bias over the cord, right side out, and place under the Cording Foot. Stitch along close to the cord. Use a Cording Foot when placing covered cord in a seam or along an edge.

Fig. 46 shows a left toe Cording Foot being used to cover cord and join it to a fabric edge in one stitching.

When the fabric is extremely bulky, loosen the Presser Bar Adjusting Cap Screw slightly to allow the fabric to feed more freely under the Cording Foot.

ZIPPER ATTACHING FEET

Zipper Attaching Feet are designed to allow the needle to stitch the proper distance from the metal of a slide fastener. The needle hole is cut a little deeper than on the Cording Feet to allow sufficient space between the metal and the line of stitching so the fabric will not catch in the slide pull as it is being opened and closed.

Fasten the desired Zipper Attaching Foot on the presser bar in place of the regular presser foot. Baste the slide fasteners in the garment then machine stitch close to the metal slide.

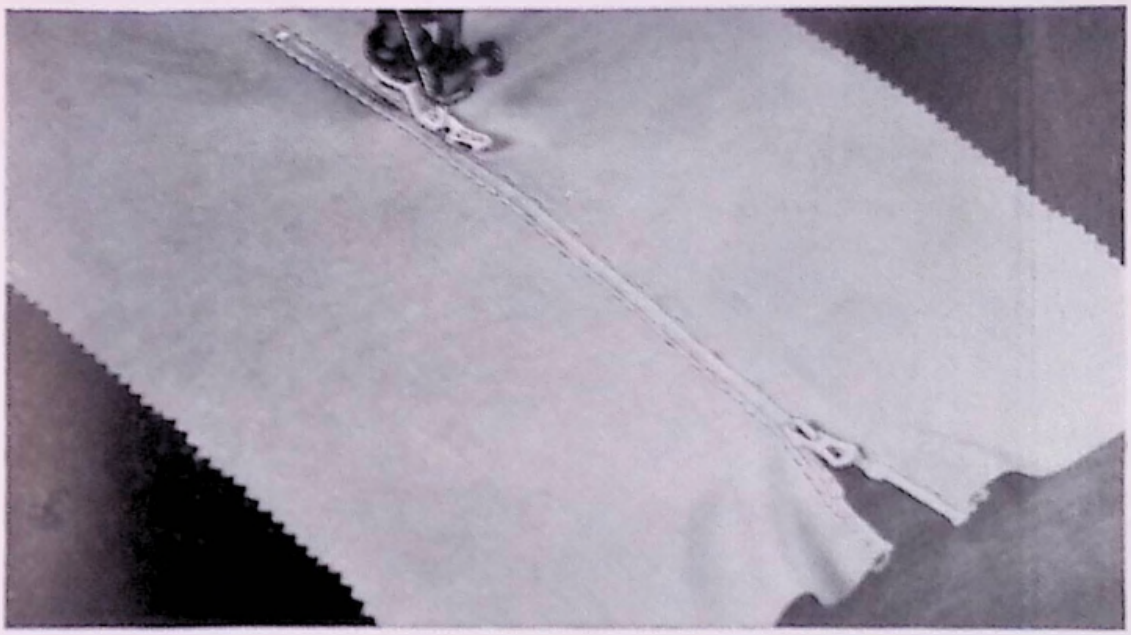


FIGURE 47

Fig 47 shows a right toe Zipper Attaching Foot being used to stitch a slide fastener in a garment.

If upper thread breaks. it may be caused by: needle improperly set; machine not threaded correctly; upper tension too tight; needle too small for thread being used, especially if thread varies in thickness; needle eye too sharp; needle rubbing against presser foot in passing it.

If lower thread breaks. it may be caused by: bobbin case not threaded correctly; lower tension too tight; bobbin wound too full, causing thread to slip over the outer rim.

If needle breaks. it may be caused by: pulling the sewing, causing needle to strike the needle plate; attempting to sew very heavy seams in hard surfaced fabrics such as canvas without sufficient pressure on the presser foot. To increase pressure on the work tighten the presser bar cap; to decrease pressure loosen it.

If machine makes loop stitches. it is probably caused by too loose tension, both upper and lower.

If machine skips stitches, it is probably caused by: using wrong needle; bent needle, or needle not properly set. Use only genuine White Rotary needles.

If stitches are not even. it may be caused by: too short a stitch; pulling the sewing; using too fine a needle with too coarse or uneven thread.

If machine runs hard. it may be caused by running the machine while threaded without having material under presser foot, causing the shuttle race to become clogged with thread. Remove bobbin case and turn disc wheel in **wrong direction** for several revolutions, which action will cut the thread out; or remove shuttle as directed and clean shuttle race and driving pins.

SUPPLIES OR SERVICE

When in need of any supplies, parts or repair service for this machine call the dealer from whom it was purchased, if possible. If not, get in touch with your nearest White Sewing Machine authorized distributor, who handles only genuine parts and supplies and employs properly trained service men.

Some minor difficulties occasionally encountered, together with directions for overcoming them, are listed on Page 52.

Do not permit unqualified agents or unauthorized repair men to tamper with your machine.

Should it ever be necessary for you to return your entire machine, the sewing head, motor or any parts to the factory for repairs or adjustment, be sure to enclose your name and address in the box or package. If shipped by freight or express, the charges must be PREPAID. At the same time send a letter separately, explaining in detail just what is being returned and why, always giving the serial number of the machine which you will find on the side of the arm below the disc wheel. Also state plainly where return shipment is to be made, and whether by freight or express.

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